

SAMYANG
BIOPHARM

lafille®
LAFULLEN

LAFULLEN
Prefilled Syringe 1EA
PCL(Polycaprolactone) Based Dermal Filler

FILL YOUR BEAUTY,
CAPTURE THE MOMENT



LAuter(Pure) x FÜLLEN(Fill)





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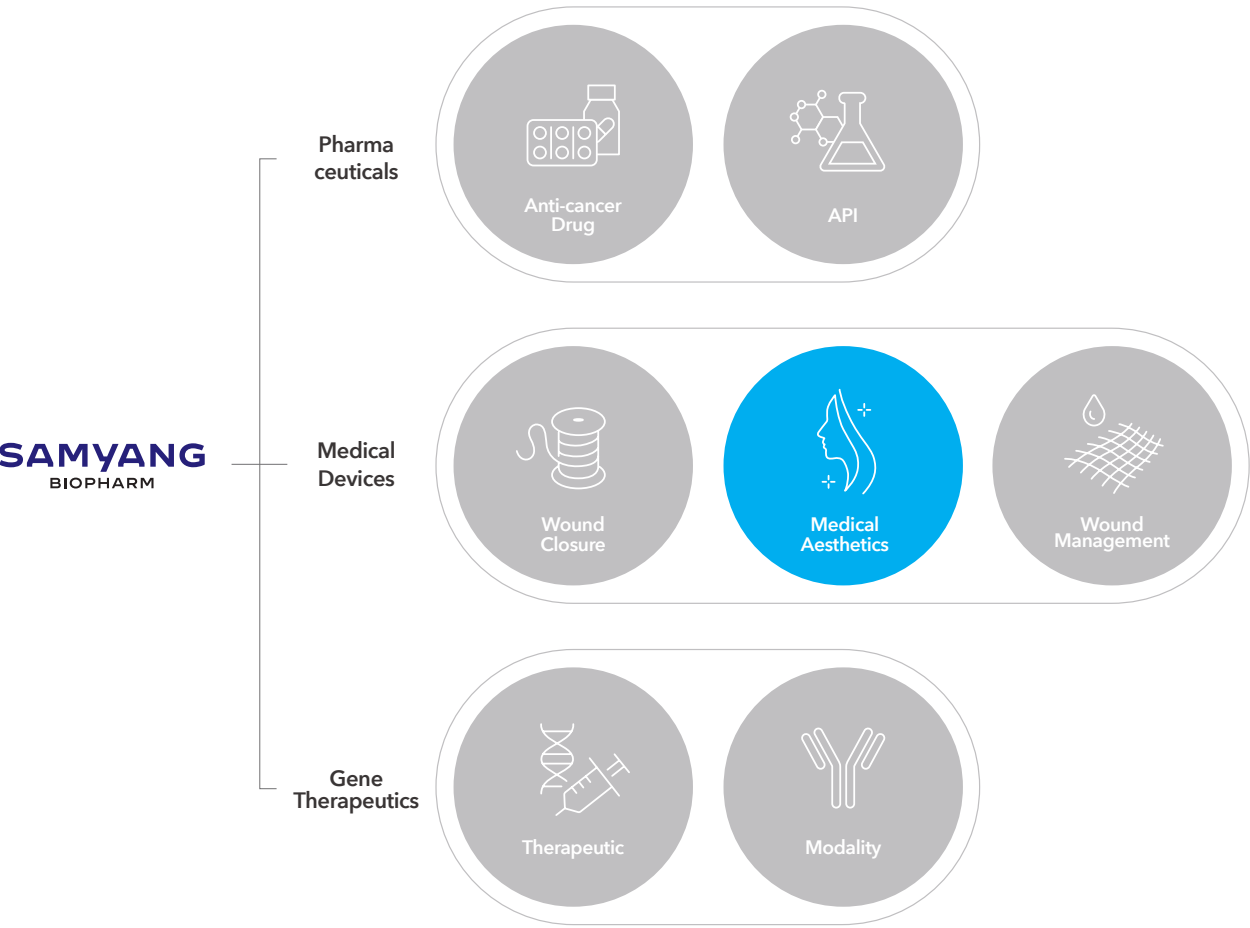
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Company Profile

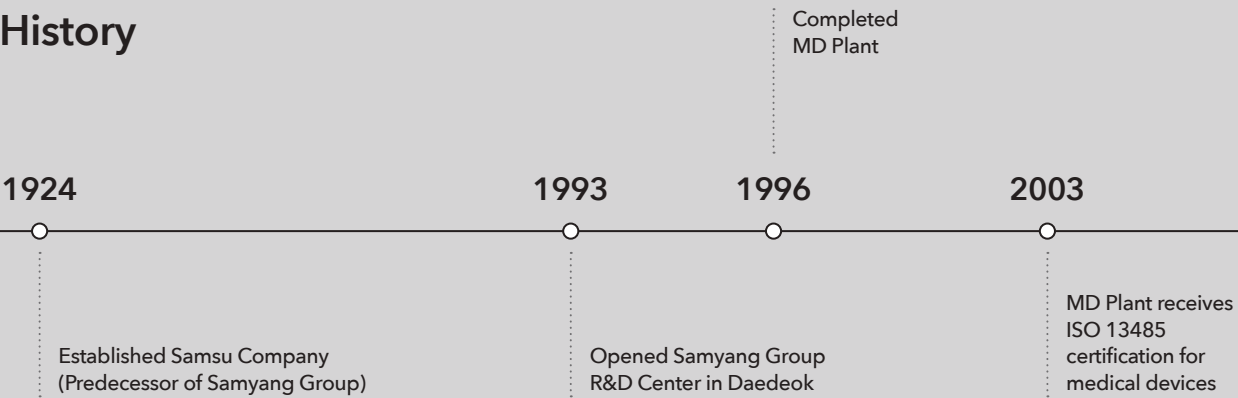
Samyang Biopharm Corporation

Healthcare Solutions for a Better Quality of Life

With **nearly 30 years of expertise** in biodegradable polymer technology, Samyang Biopharm Coperation has established itself as the **global No.1 in surgical raw materials**. Building upon this leadership and strong global market presence, we are now expanding our portfolio into **Medical Aesthetics**, delivering and reliable soulutions that enable better outcomes and higher patient satisfaction.



History



Major Location

Office / R&D

Samyang Discovery Center (Headquarter & R&D Center)



Completion 2016
Related Department
Marketing & Sales
Regulatory Affairs
Planning R&D Center
Location
Seongnam-si,
Gyeonggi-do, Korea

Plant

Pharmaceuticals Plant



Completion 1997
Product
Injection, API
Location
Daejeon, Korea
Certification
EU GMP, PMDA (Japan),
GMP, KGMP (Korea)

Medical Devices Plant



Completion 1996
Product
Sutures, Hemostats, Patches
Location
Daejeon, Korea
Certification
KGMP, CE Mark, ISO13485
(Medical Devices), KGMP (Pharmaceuticals)

Gongju Plant



Completion 1996
Business Model
Biodegradable polymer
material
Location
Gongju, Korea
Certification
ISO 9001

Overseas Branch

Samyang Biopharm USA Inc.

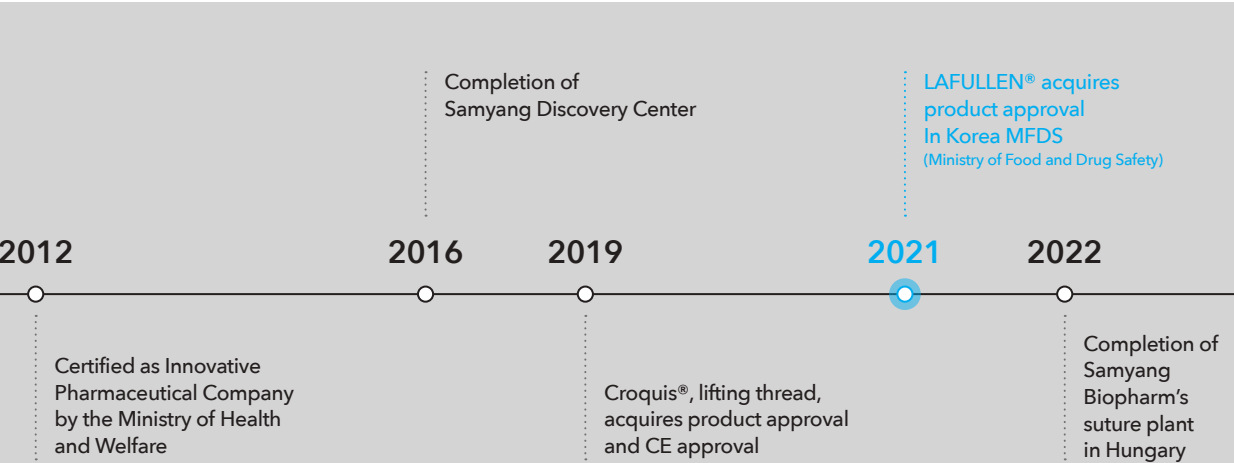


Completion 2018
Business Model
- NRDO (No Research Development Only)
- Therapeutics for Oncology
and Rare Diseases
- License-in / Out
Location
Cambridge, MA, USA

Samyang Biopharm Hungary



Completion 2022
Business Model
Surgical suture
Location
Gödöllő, Hungary
Certification
ISO 13485



FILL YOUR BEAUTY,
CAPTURE THE MOMENT



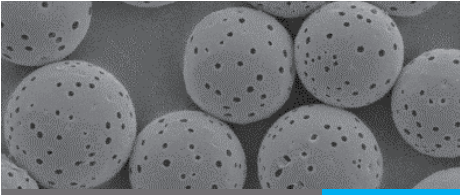
Introduction to LAFULLEN®

LAFULLEN®

Product	LAFULLEN®
Classification	Medical Device Class IV
No. of Product License*	21-941
Type	Prefilled Syringe 1ml x1 (Without needle)
Target layer	Subcutaneous fat layer
Treatment Longevity	24 months

*Korea MFDS (Ministry of Food and Drug Safety) No.

Composition



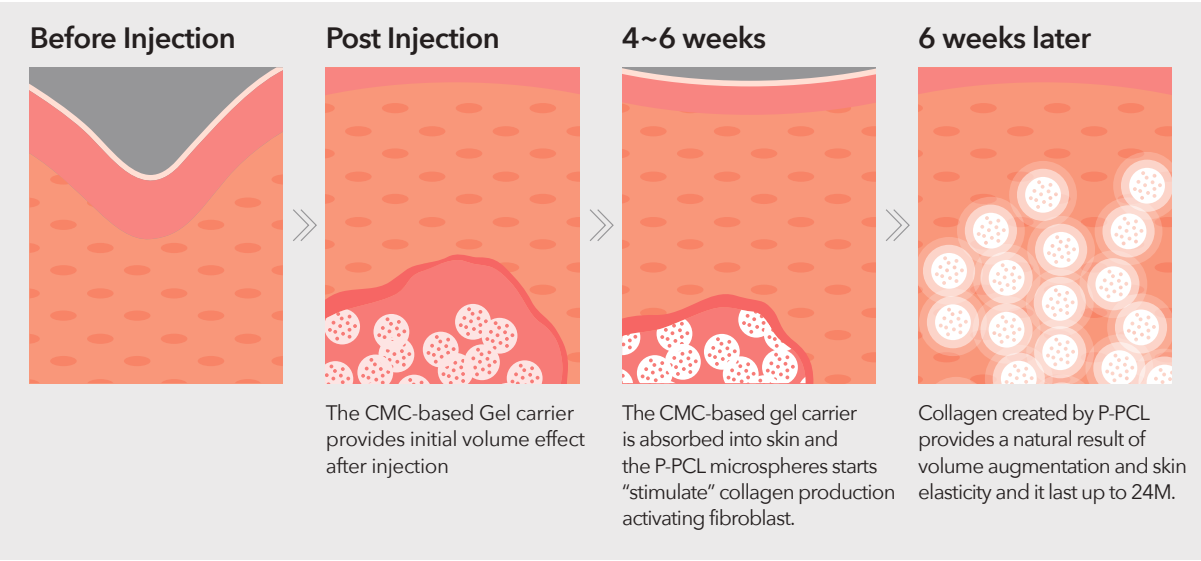
70% CMC based Gel carrier	30% P-PCL* Microsphere
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· PCL is a biodegradable polymer that decomposes into H₂O and CO₂ in our body.

*P-PCL: Porous Polycaprolactone
*CMC: Carboxymethylcellulose



LAFULLEN® Mechanism of Action



***Immediate Correction:** CMC Gel provides immediate filling & wrinkle correction

***Sustained Volumization:** PCL microspheres stimulate neocollagenesis for long-lasting natural results*

SEP Technology

The even-sized porous microspheres produced using Samyang's patented SEP Technology can be used to improve facial wrinkles through injection.

***SEP Technology:** Samyang's Evenly distributed Porous particle Technology

Patent No. KR102156646B1

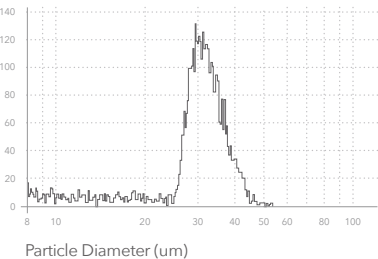


Key Features of LAFULLEN®

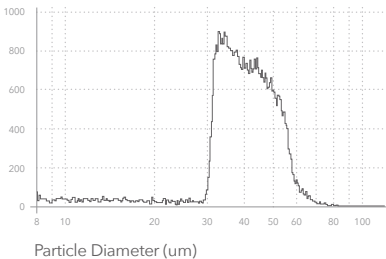
1. Comfortable Injection

LAFULLEN® contains smooth, spherical, and homogeneously distributed bio-stimulating particles, designed to promote optimal tissue integration. Its formulation is optimized for easy administration, ensuring a consistent and stable injection force throughout the procedure, thereby enhancing both practitioner control and patient comfort.

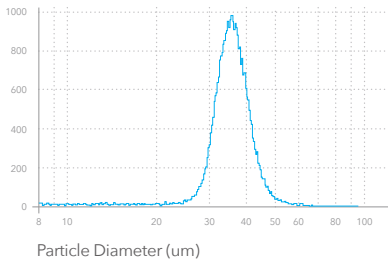
CaHA Product



Conventional PCL Product

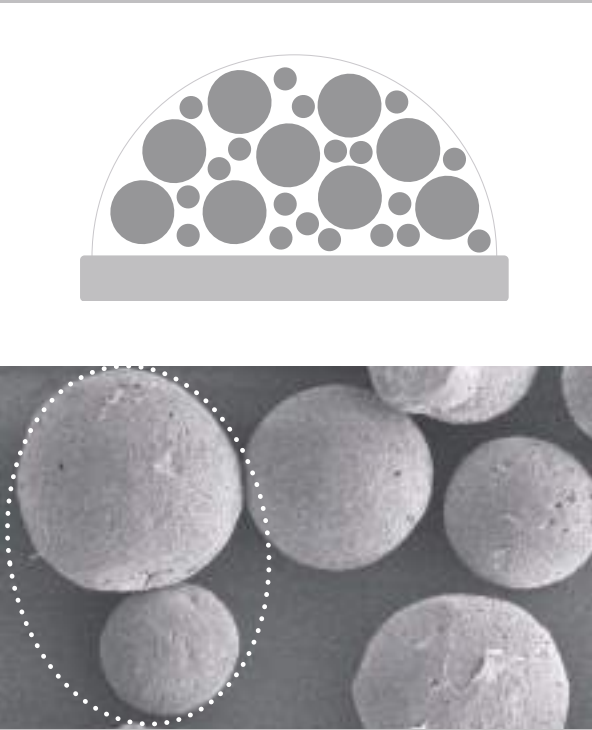


LAFULLEN®

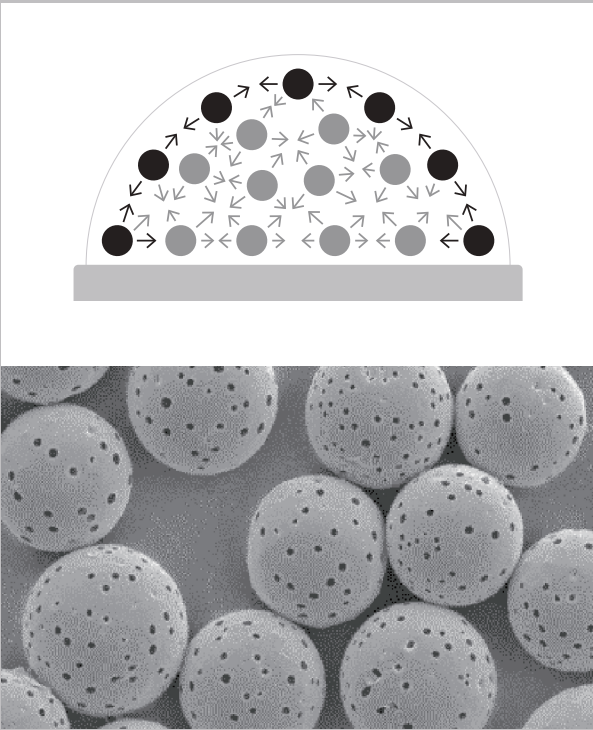


2. Minimal Risk of Nodules

Even-sized porous microspheres enhance the surface tension of particles, providing greater buoyancy and ensuring uniform distribution. This property contributes to improved stability and performance in various applications.



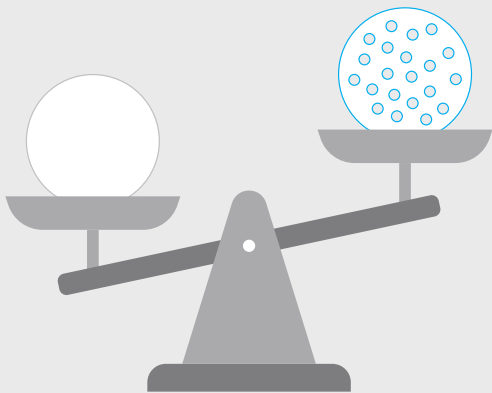
Conventional PCL Product



LAFULLEN®

3. Enhanced Volume Effect

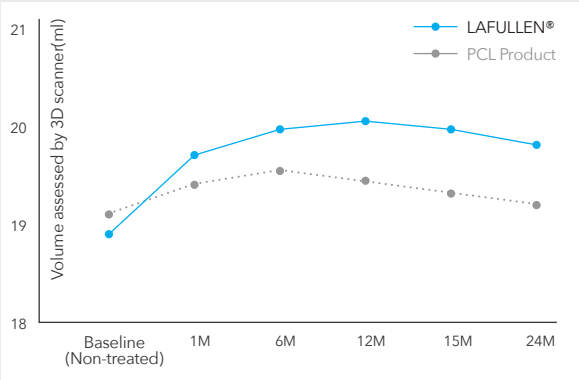
LAFULLEN® microspheres are lighter and more porous than conventional particles of the same size. This allows a greater number of particles to be accommodated within the same volume, resulting in a denser distribution and a more natural volumizing effect.



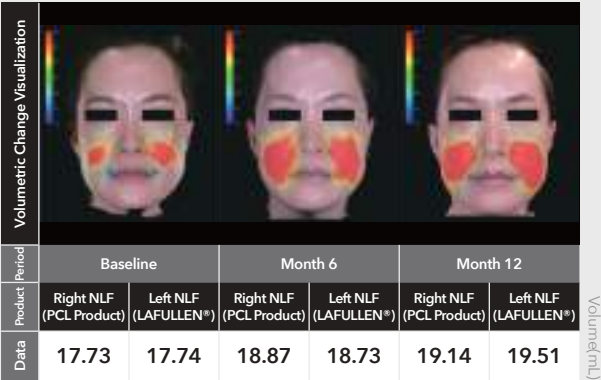
LAFULLEN® delivers superior volumizing efficacy compared with PCL Product, maintaining its effectiveness even over the long term.

Product Name	Particles per 1 cc
LAFULLEN®	●●●●●●
PCL Product	●●●●
PDLLA Product	●●●
CaHA Product	●●

Comparison of Volumizing Effects

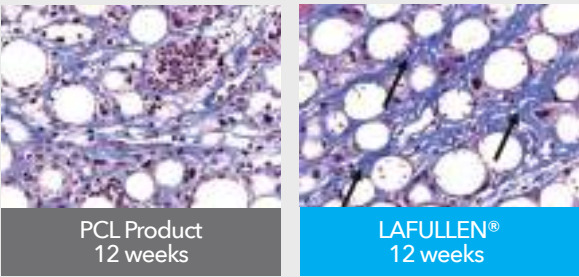


Long-term volumizing effects were evaluated by analyzing volume changes using a 3D scanner(Morpheus 3D®)



Photographs of volume changes nasolabial folds measured by a three-dimensional scanner of a representative participant.

Neocollagenesis



Collagen fibers were more evenly generated compared to conventional PCL product.

1. Park JW et al. Dermatol Ther. 2022;35(7):e15508
2. Kim JS et al. J Cosmet Dermatol. 2020;19(3):596-604

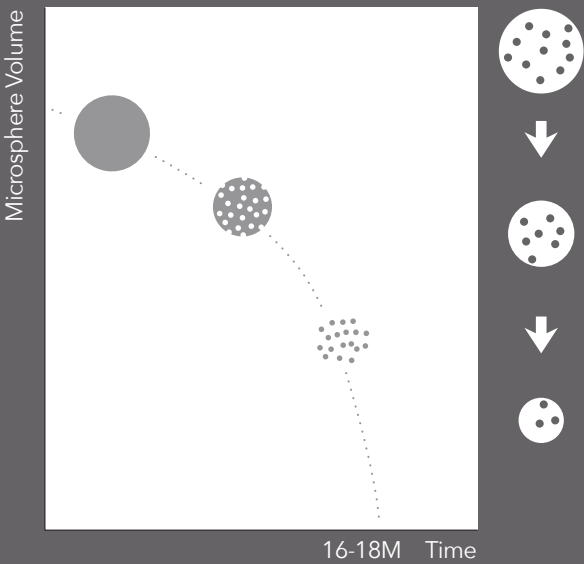
4. Complete Biodegradation

1) Sustained Volume, Timely Biodegradation

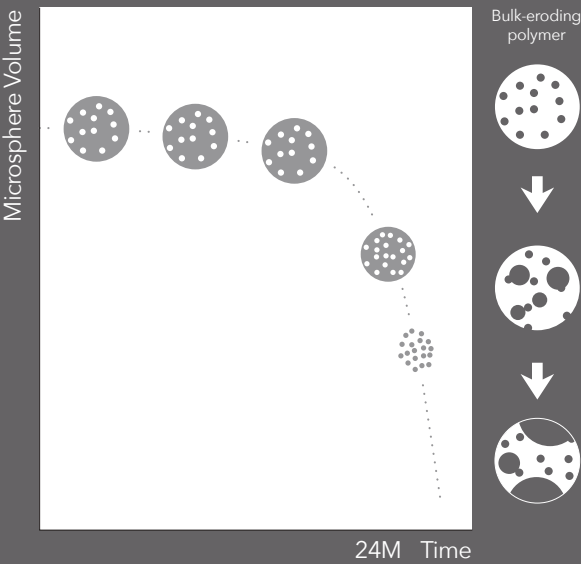
Porous PCL microspheres undergo bulk erosion degradation, ensuring a gradual and controlled breakdown within the body. This unique mechanism guarantees complete and safe biodegradation, while maintaining sustained volume for a long-lasting, natural result.



CaHA Product



LAFULLEN®

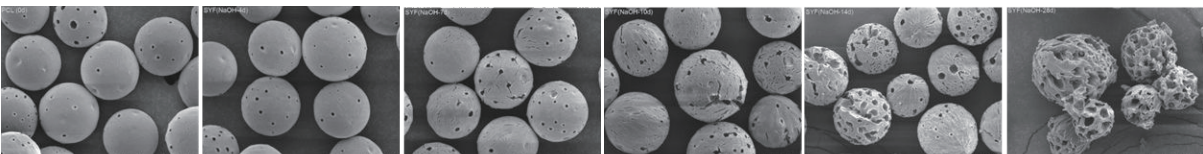
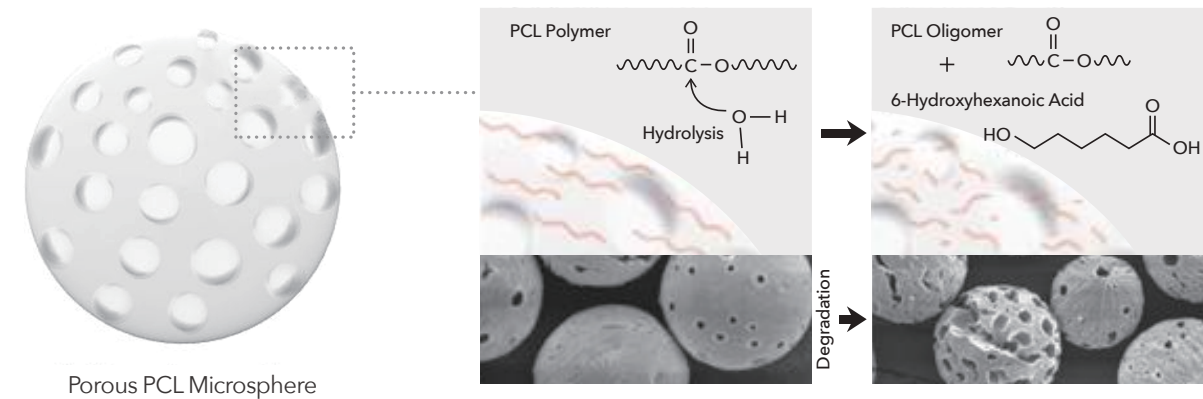


Bulk erosion: Decrease in molecular weight and loss of mechanical properties begin at the start of degradation, while mass loss is delayed. The external dimensions of the polymer remain essentially unchanged, until disintegration occurs at a critical time point.

2) Biodegradation Mechanism of Porous PCL Microspheres

Porous PCL microspheres safely biodegrade over time, ensuring gradual breakdown into naturally metabolizable components.

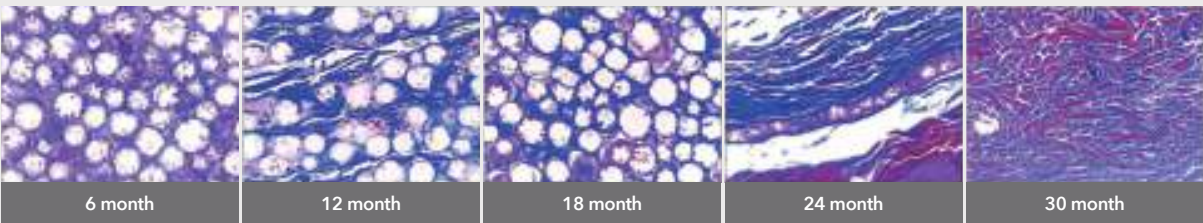
First phase	Second phase
• Non-enzymatic hydrolytic cleavage of ester linkage • Length of Polymer chain continuously decrease in controlled, predictable manner • First phase is tunable by controlling chain length • There is no volume loss in this stage	• Start at specific chain length around 3,000 Da to 5,000 Da • Start mass loss and diffuse into small fragmentation



Porous PCL microspheres gradually absorb water and form micropores, becoming more porous over time until they eventually transform into a sponge-like degraded structure. This natural process ensures a steady and predictable breakdown of the material.

Full degradation of P-PCL microsphere, Rabbit

LAFULLEN®



In a rabbit study, Poreuse PCL microspheres maintained their volume over an extended period and were completely biodegraded over time, leaving no residual material. The results demonstrate long-lasting efficacy and safe, complete clearance from the body.

1. Kim JS et al. J Cosmet Dermatol. 2025;24(4):e70156

