

**SAMYANG**  
BIOPHARM

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**SAMYANG**  
BIOPHARM

**라fulle**  
LAFULLEN

**LAFULLEN**

Prefilled Syringe 1 ea  
PCL(Polycaprolactone) Based Dermal Filler

**LAFULLEN®**  
L A F U L L E N

LAuter(Pure) x FULLEN(Fill)

Fill your Beauty,  
Capture the Moment

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- 09 Pre-clinical Study
- 10 Clinical Study



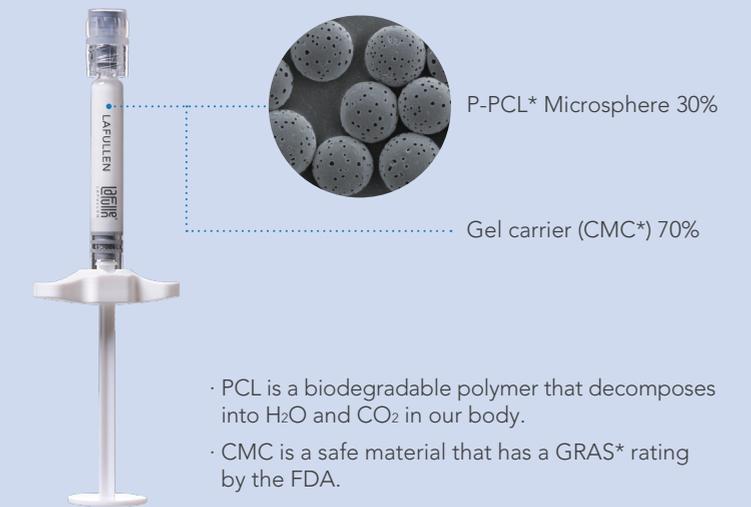
## Product

### LAFULLEN®

Product	LAFULLEN®
Classification	Medical Device Class IV
No. of Product License*	21-941
Type	Prefilled Syringe 1ea

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

### LAFULLEN® Composition



\* P-PCL : Porous Polycaprolactone

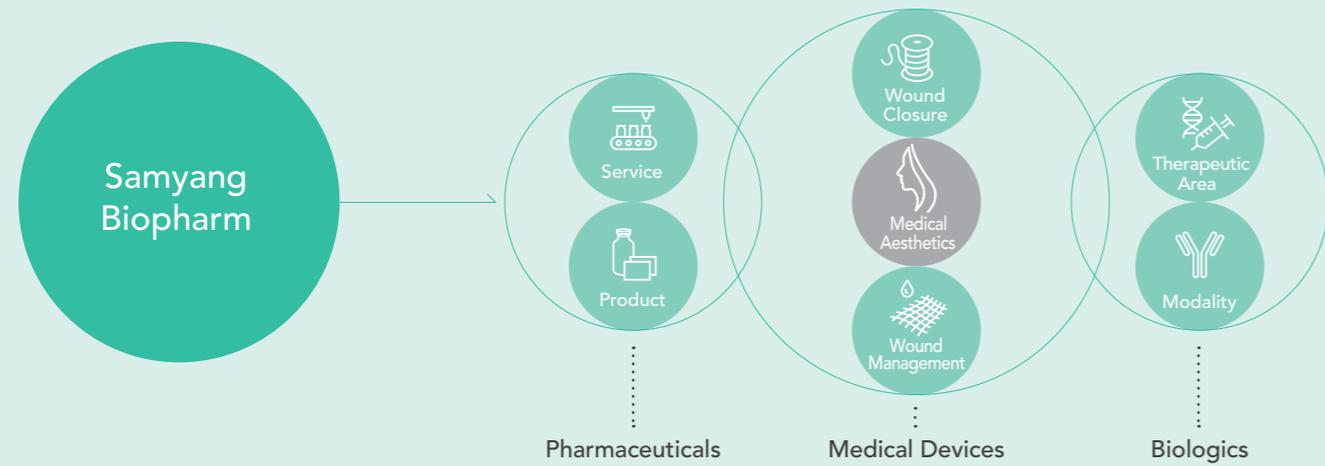
\* CMC : Carboxymethylcellulose

\* GRAS : Generally Recognized As Safe

# Samyang Biopharm Corporation

## Business Area

Samyang Biopharm's Medical Devices business has become the Global No.1 in Surgical Suture Raw material with more than 25 years of experience in biodegradable polymer manufacturing and application technology. Samyang now intends to expand its portfolio for Medical Aesthetics.



## Major Achievements



Global Suture Raw Material M/S



Product Portfolio



Exporting Country



Global Partnership

## Major Location



**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



**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)



**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

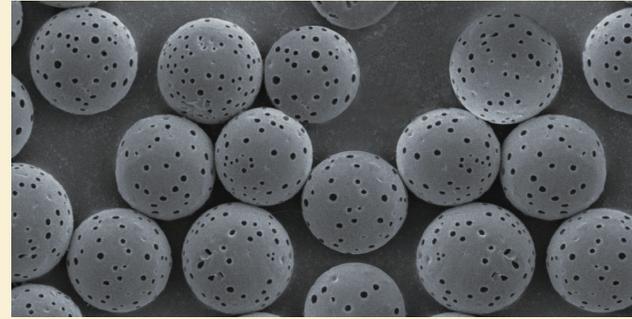
# LAFULLEN® P-PCL Technology

- LAFULLEN® uses SEP Technology\* for manufacturing highly homogeneous P-PCL microspheres which have unique pores and smooth surfaces.
- P-PCL microspheres reduce the polymer content per unit volume.
- Increased particle's homogeneity improves injection convenience and minimizes the possibility of nodule.

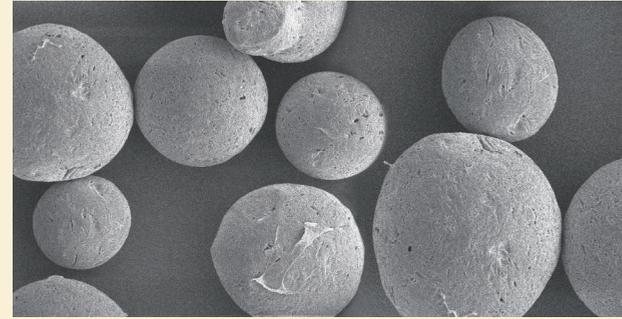
\* SEP Technology  
 Samyang's Evenly distributed  
 Porous particle Technology

## Particle Shape (×1,000)

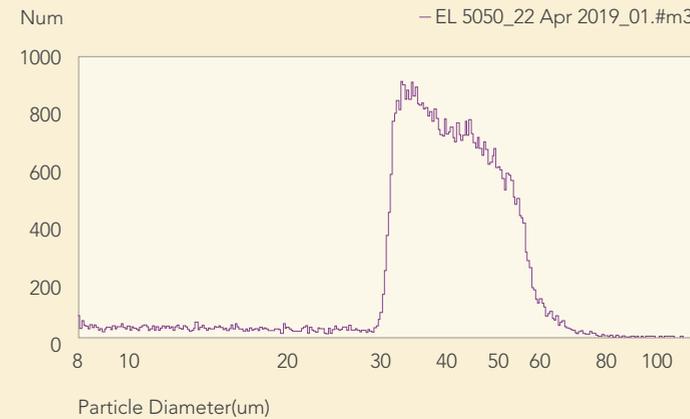
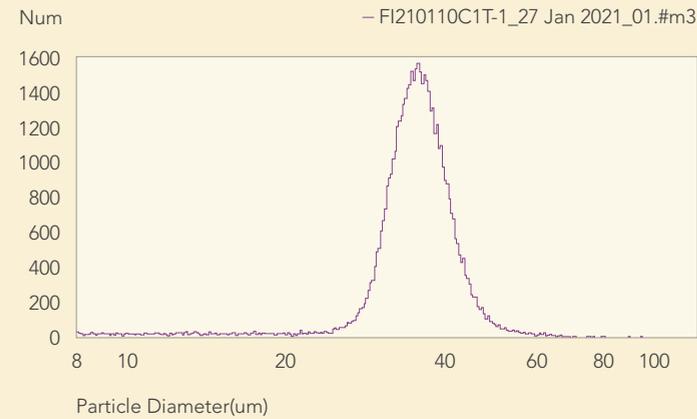
LAFULLEN®



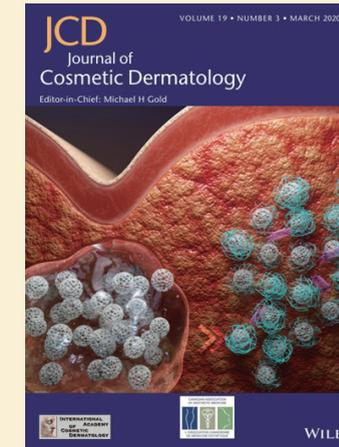
Product A



## Particle Size Distribution



# Pre-clinical Study

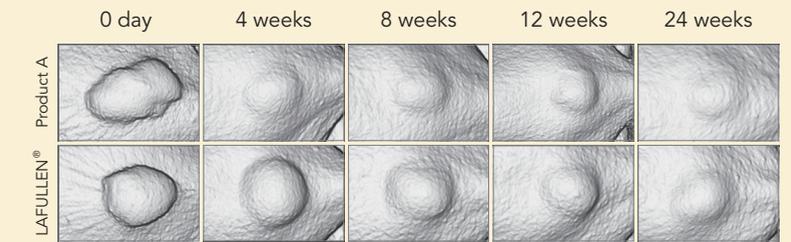


Pre-clinical study on the safety and efficacy of LAFULLEN® has been published in the prestigious international academic journal 'Journal of Cosmetic Dermatology(JCD),' a Scientific Citation Index (SCI) publication.

JCD Volume 19, Issue 3 (2019) – LAFULLEN® Cover

## Volumizing effect

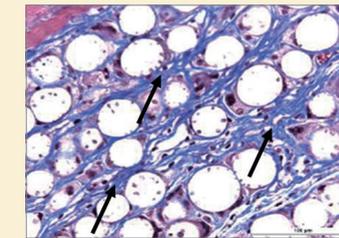
Volume retention of LAFULLEN® shows superior results compared to Product A.



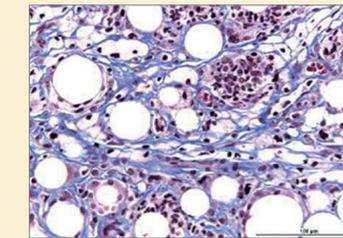
3D Scanning Device(Primos®) picture, Hairless mice

## Neocollagenesis

Collagen fibers were more evenly generated compared to Product A.



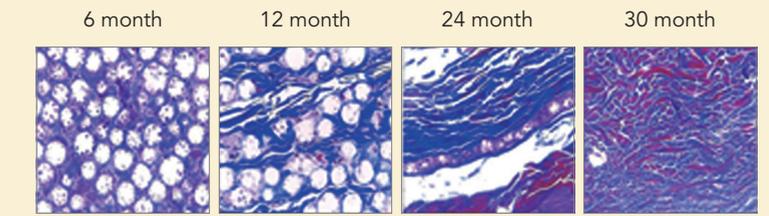
LAFULLEN® (12 weeks)



Product A (12 weeks)

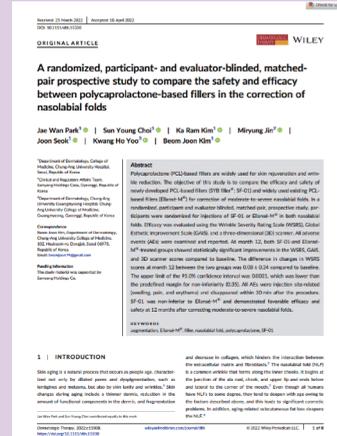
## Full Degradation

All of the P-PCL microspheres were safely degraded in rabbits throughout 30 months observation period.



Full degradation of P-PCL microsphere, Rabbit

# Clinical Study

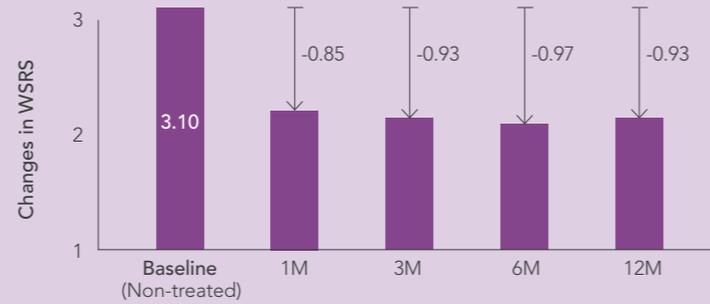


Clinical study on the safety and improvement effect of LAFULLEN® has been published in the prestigious international academic journal 'Dermatologic Therapy,' a Scientific Citation Index (SCI) publication.

Dermatologic Therapy Volume 35, Number 5 (2022)

## WSRS\*

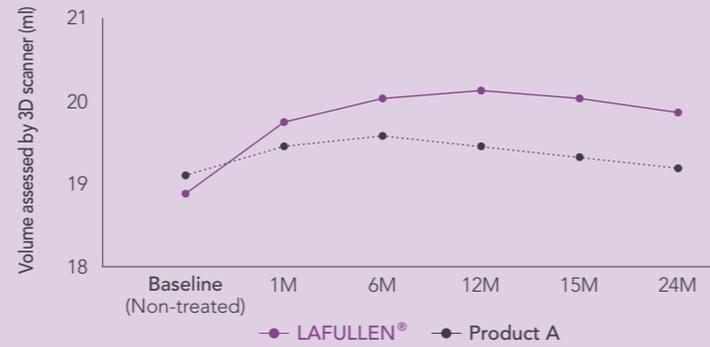
Efficacy for correction of wrinkles after the treatment sustained up to 12 months.



\* WSRS: Wrinkle Severity Rating Scale

## Volumizing

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



## GAIS\*

Over 96% of patients had 'improved, much improved and very much improved' results at 6, 9, and 12 months period after LAFULLEN® treatment.



\* GAIS : Global Aesthetic Improvement Scale (3 = Very much improved, 2 = Much improved, 1 = Improved, 0 = No change, -1 = Worse)

