

mirajet

JSK



The One & Only

needle free laser jet injector

mirajet



JSK

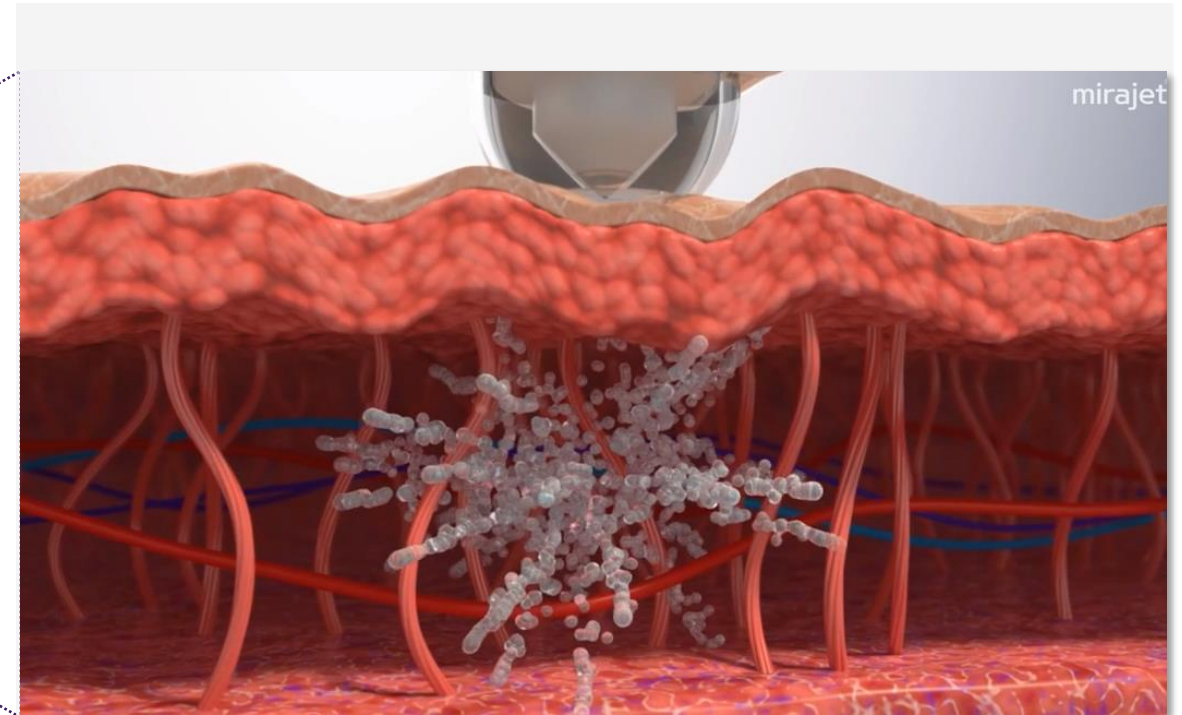


Product Introduction



■ Market Status

Current Situation



There is none of a method among the existed DDS that can inject **uniformly and accurately** with a **required amount of drug** to **target skin layer** at a **high speed**

■ Market Status

Problems of existing methods



Needling treatment



Needling / Air-Jet treatment

■ Implementation of mirajet

Treatment using mirajet



mirajet



what is mirajet ?

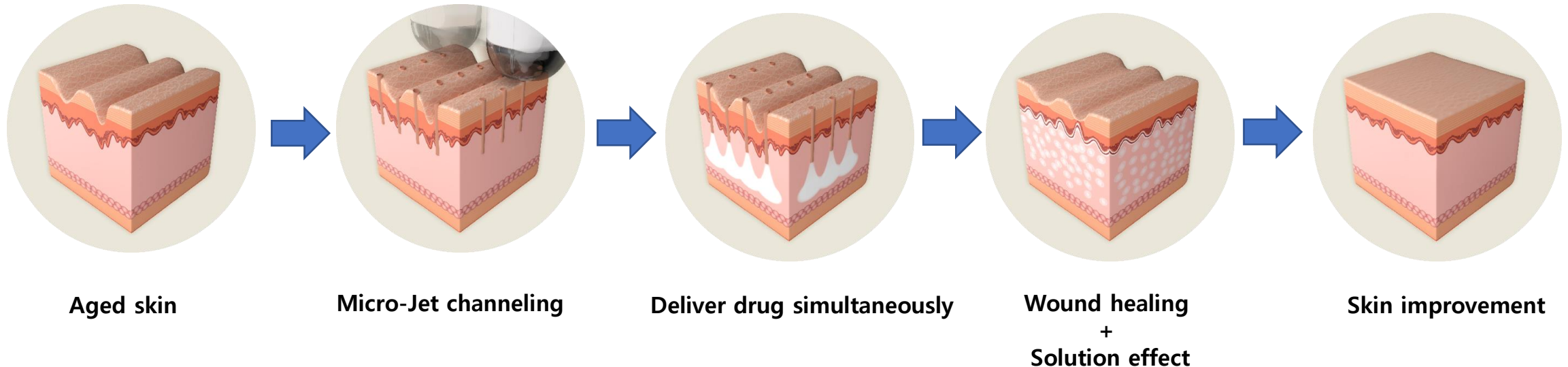
Needle Free Laser Jet Injector

- Transfer force from laser beam to **jet formation** and deliver drug to skin.
- Accessible to inject **accurate small amount** of solution to dermis at a high speed **uniformly and repeatedly**.
- **Synergetic effect** from **drug** delivery and skin activation by **micro-jet** at the same time.
- **Safe** and **convenient** treatment without needle and thermal burn side effects.

■ Preview

What is Jet Therapy?

- Physical micro damage on skin caused by micro-jet.
- Deliver solutions such as HA, Botulinum Toxin, Skin Booster to **target skin layer**.
- Besides, micro-Jet can **also stimulate the fibroblast** → Stimulate collagen formation → Stimulate skin rejuvenation and remodeling.
- Synergetic effect improves skin health **without thermal burns** compared with existing needle injection.



■ Composition

Appearance



Laser main body



Handpiece



Disposable nozzle

View
more
Information



■ Various Solutions & Indications

● Application of Various Solution



PRP



Vitamins



Glucose



Hyaluronic Acid



Botulinum Toxin

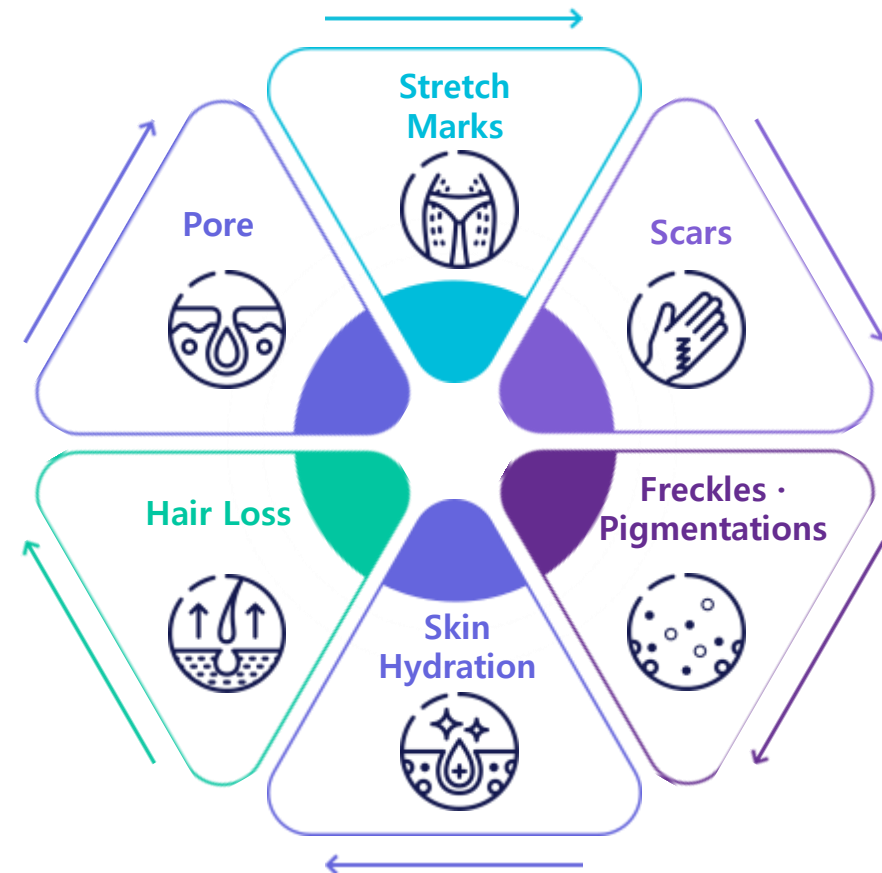


PDRN



PDLLA

● Various Indication



■ Benefit

Features



Doctors

Optimal drug delivery system required by anti-aging treatment

BENEFIT



Patients

Effectively minimize pain and downtime



Micro jet every 0.3ul on average

0.3μl



40 shots /sec
2400 shots / min

2,400 Shot/m



Inject repeatedly and uniformly in 1~2mm of skin layer

1~2mm



Needle Free

Minimal Pain



Minimize Downtime

Minimal Invasion

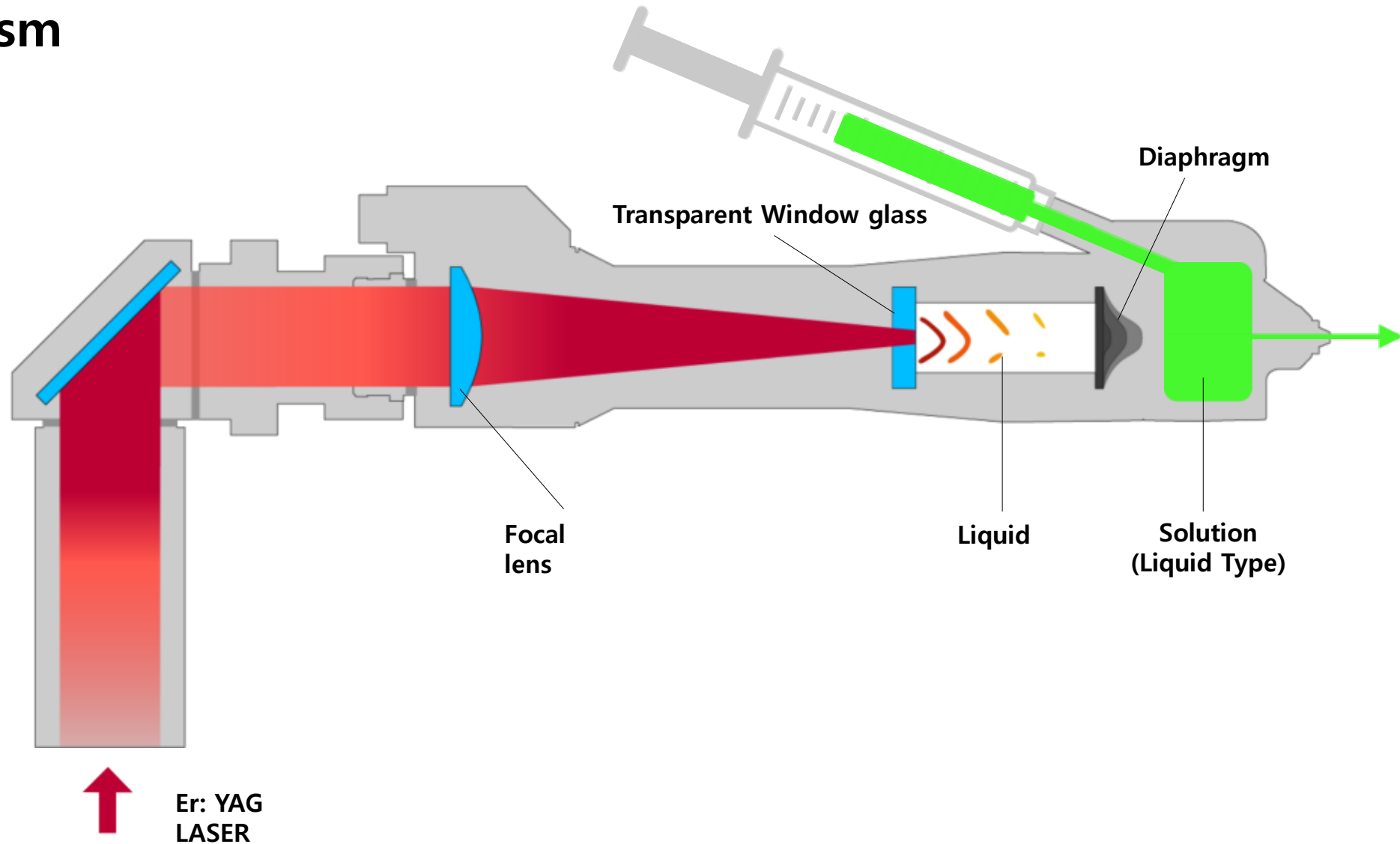


Micro-jet Effect and Solution Effect

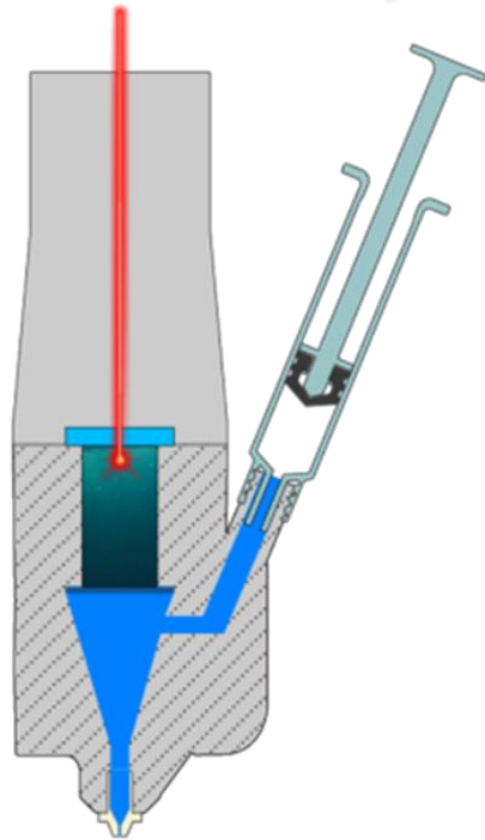
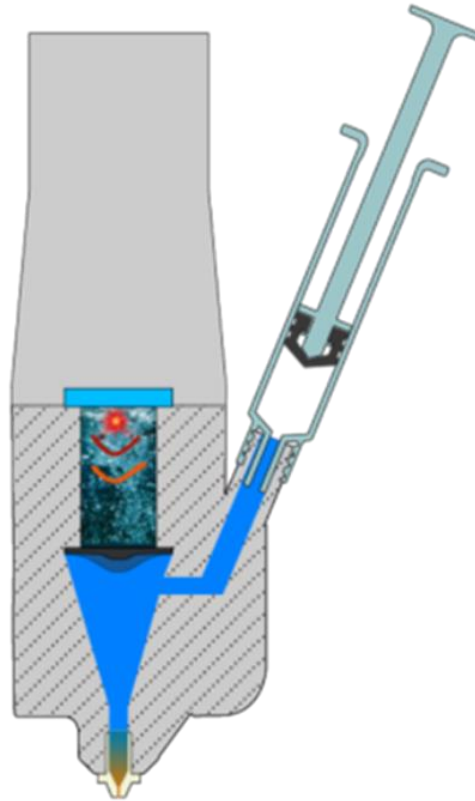
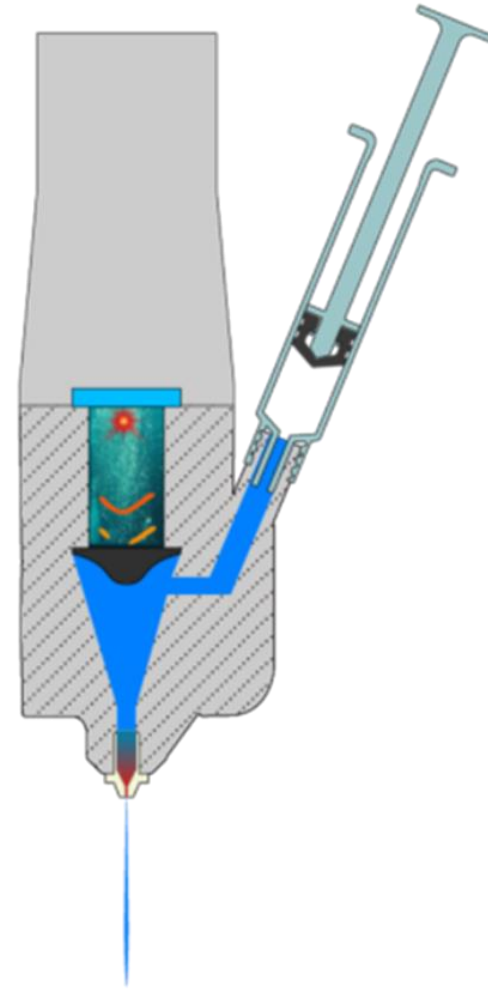
Synergetic Effect

■ Technology

Mechanism



■ Technology

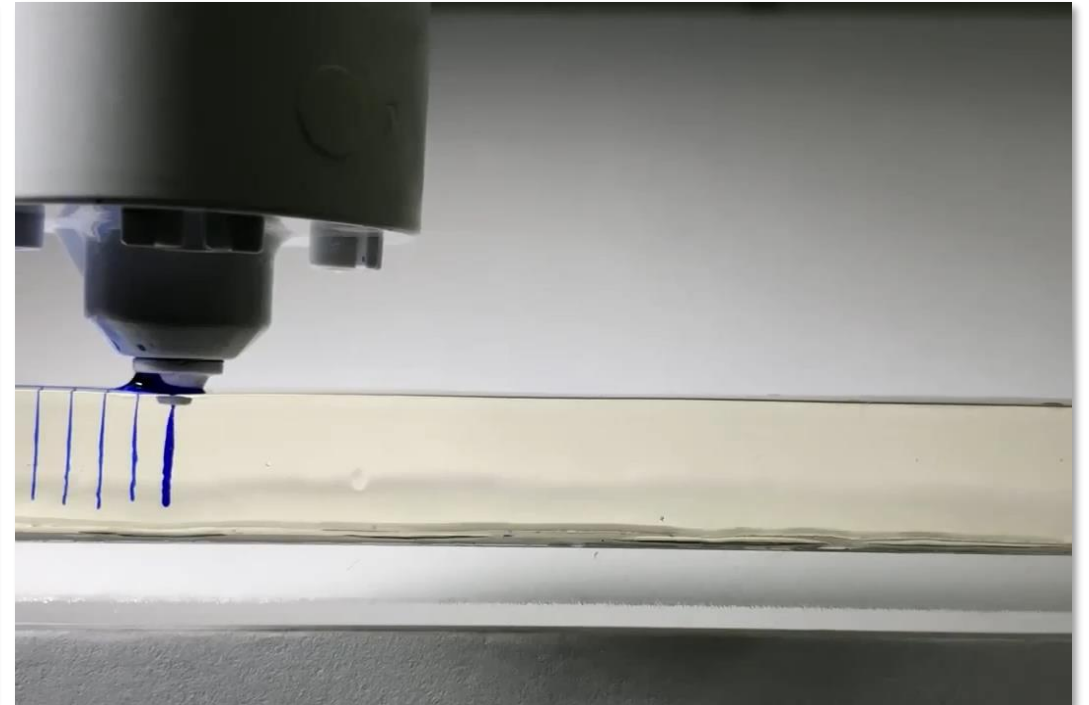
1. Laser Irradiation2. Energy Generation3. Micro-jet Generation

■ Implementation of mirajet

Stacking Shot (10 shots / sec)



Skin Injection



Gelatin Injection

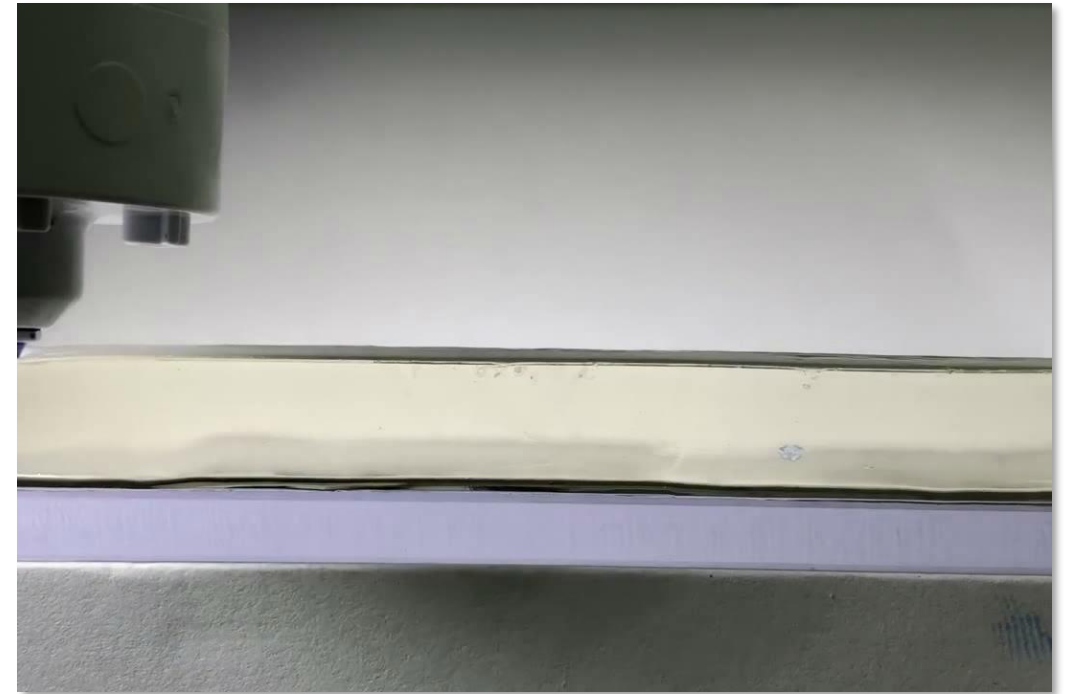
Laser applied by mirajet does not touch skin directly, so it is available to deliver drugs fast and accurately without thermal burns.

■ Implementation of mirajet

Moving Shot (40 shots /sec)



Skin Injection



Gelatin Injection

Laser applied by mirajet does not touch skin directly, so it is available to deliver drugs fast and accurately without thermal burns.

■ Implementation of mirajet

Potential as a new method for hair loss treatment



Meso Gun Injector



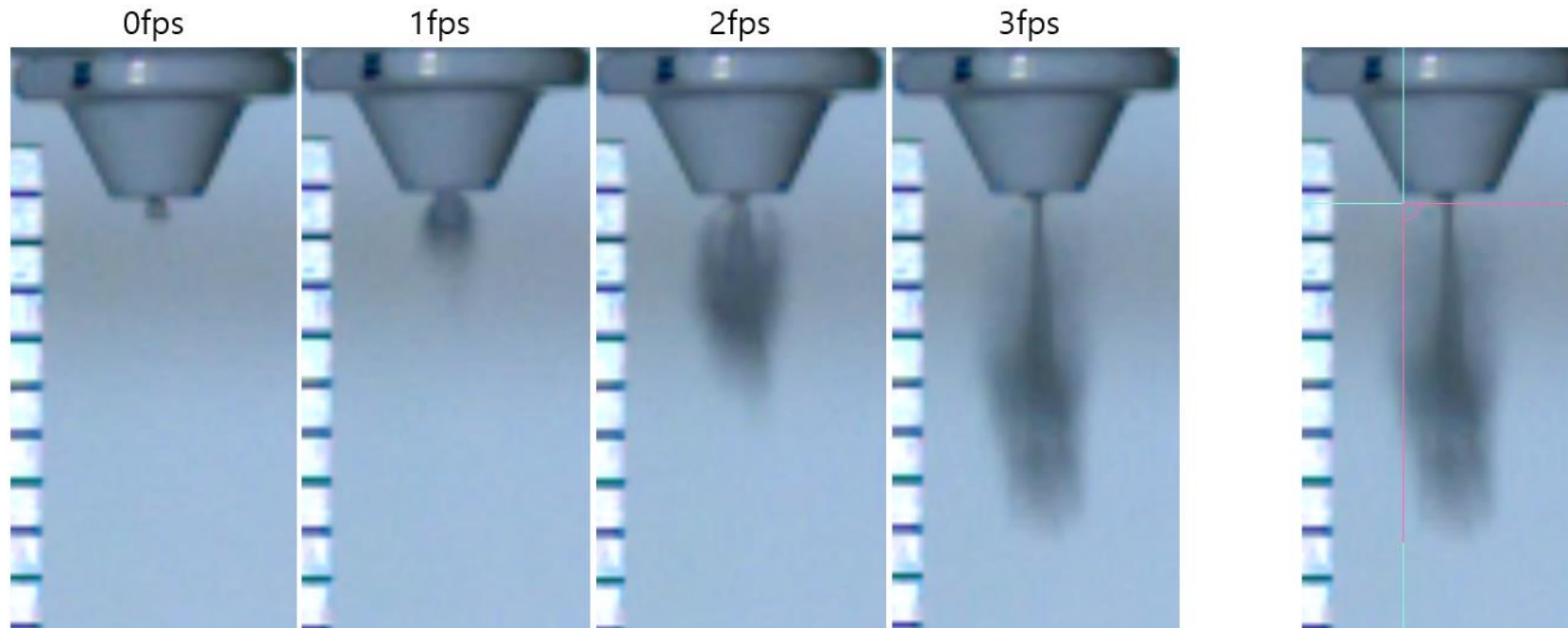
mirajet

mirajet is accessible to deliver required amount of solution when injecting to scalp effectively and virtually painless.

■ Implementation of mirajet

Injection Speed (Laser output energy: 0.6J, nozzle diameter: 200um, solution: Saline)

Injection Speed: **465m/sec**

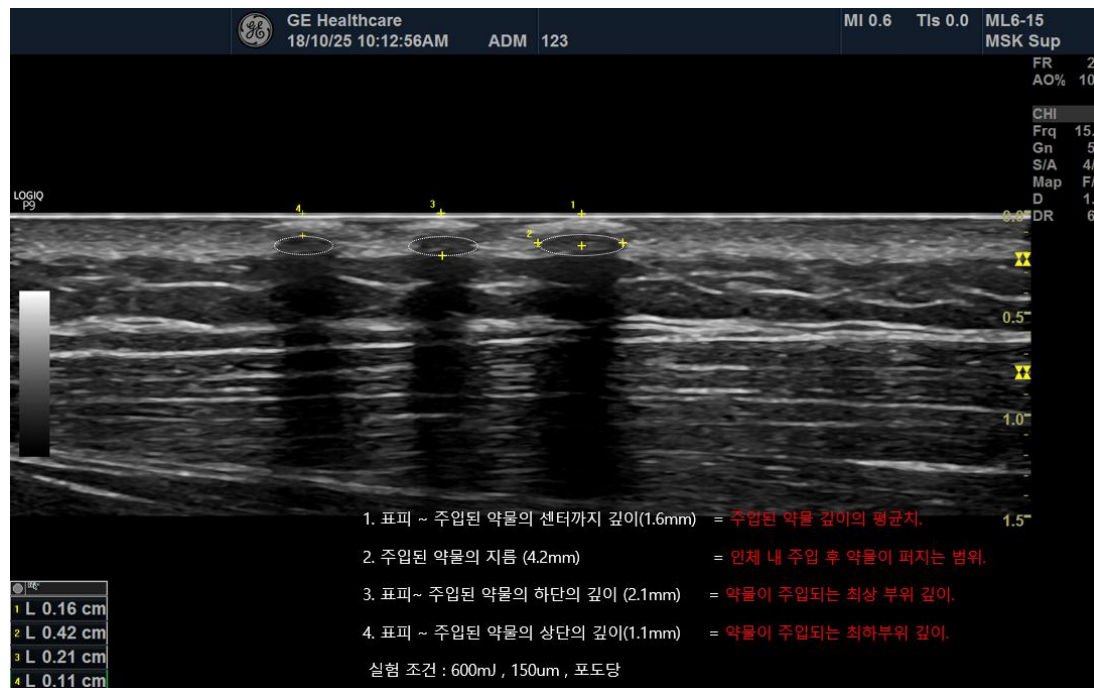


Resource: JSKBiomed Inc.

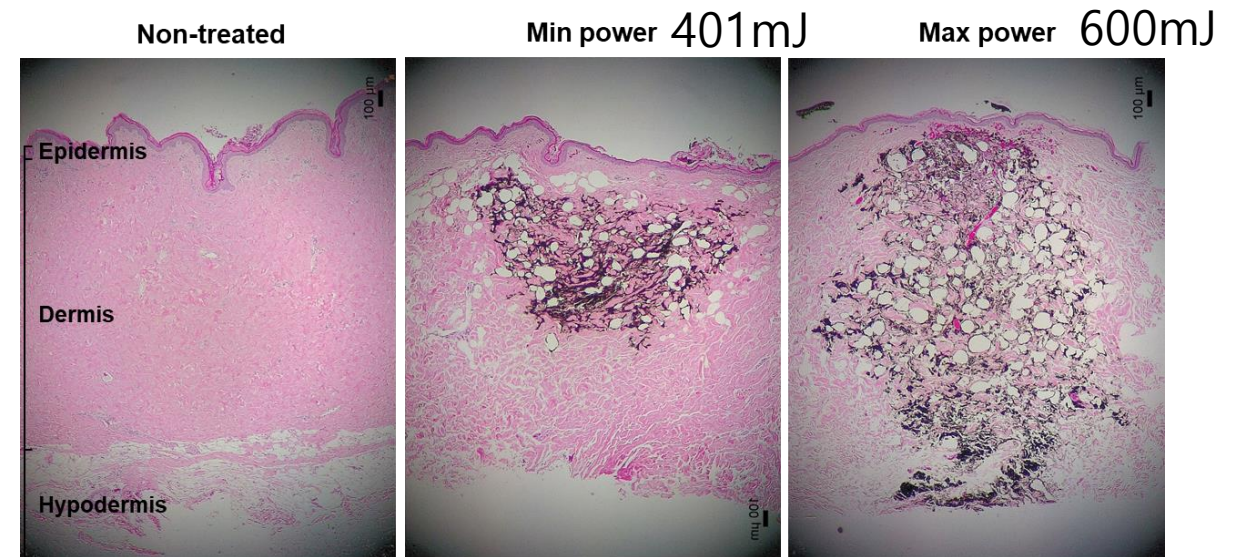
Speed : Approx. 465 m/s
distance: Approx. 6.98mm
Time: 3fps X period 5us = 15us

■ Implementation of mirajet

Ultrasound imaging of injecting in human's skin



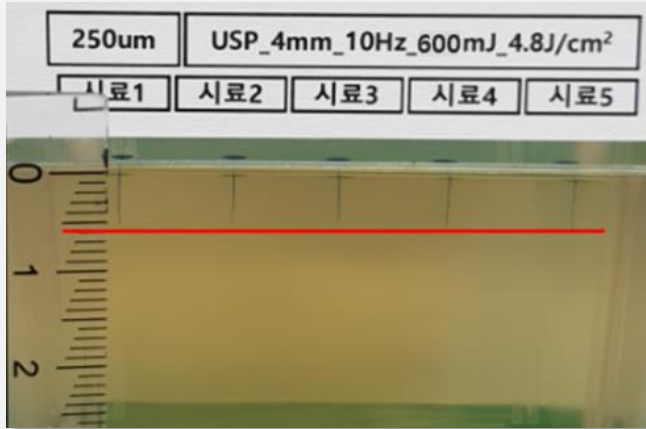
[Animal Testing] Penetration Test of Mini Pig



922.8 ± 406.4
 μm
10 times
Stacking

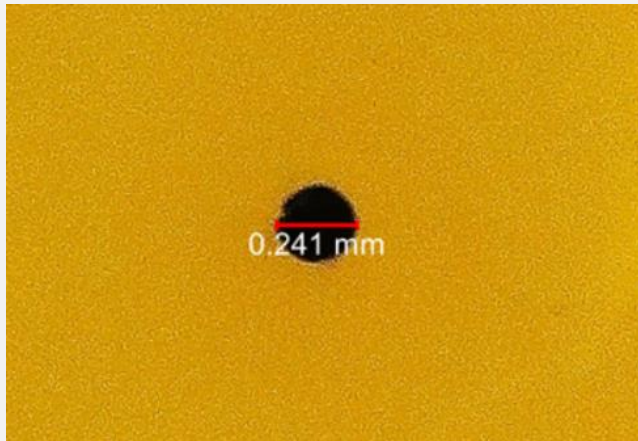
1949 ± 444.1
 μm
10 times
Stacking

■ Implementation of mirajet



Depth of penetration
Approx. 5mm

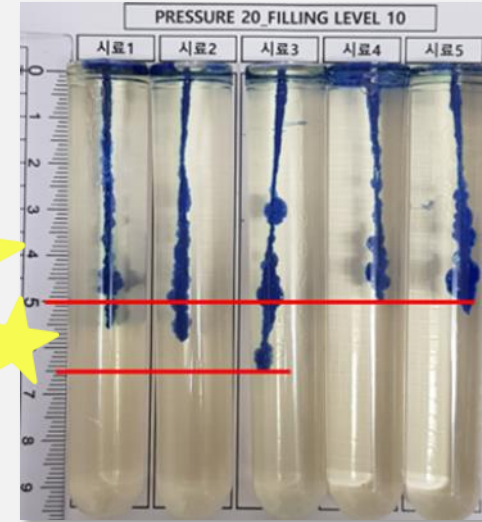
Approx.
12 times



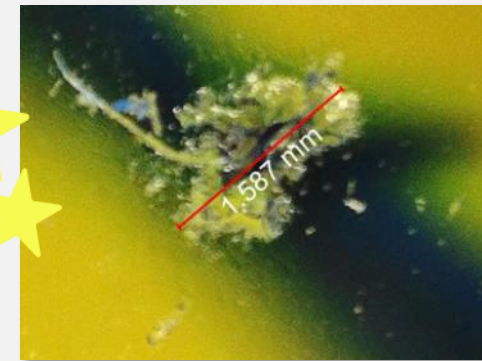
Diameter of injection point:
0.241mm

Approx.
6.5 times

mirajet laser-paused based injection



Depth of penetration
Approx.
50~65mm



Diameter of injection point:
1.587mm

Air pressure injection

■ Announcement of research results

Overseas Conferences



2018 International
Dermatological Society



41st ASLMS Annual Conference on
ENERGY-BASED
MEDICINE & SCIENCE
April 27-30, 2022

2022 The American Society
for Laser Medicine and Surgery



AMERICAN ACADEMY of
DERMATOLOGY | ASSOCIATION

2019 American
Academy of Dermatology



2023 Dubai Derma

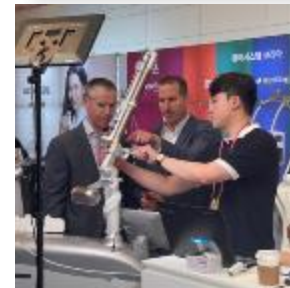


24th WORLD CONGRESS
OF DERMATOLOGY
MILAN 2019

2019 World
Congress of Dermatology



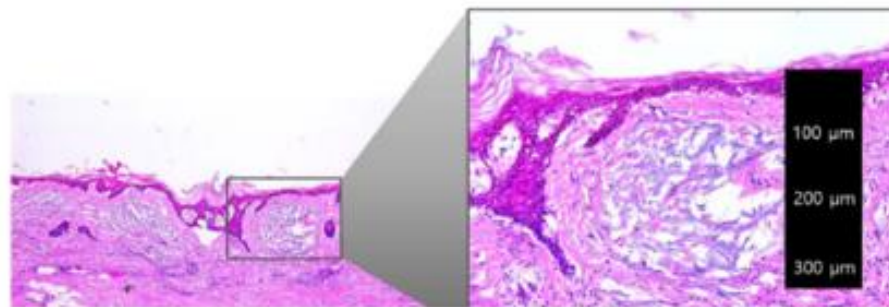
2023 Korea Derma



“ As mirajet was adopted and presented as a theme at major overseas conferences, the excellence of the product and technology is being recognized. ”

■ Published papers

Academic papers (SCI articles)



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DOI: 10.1002/ca.23892

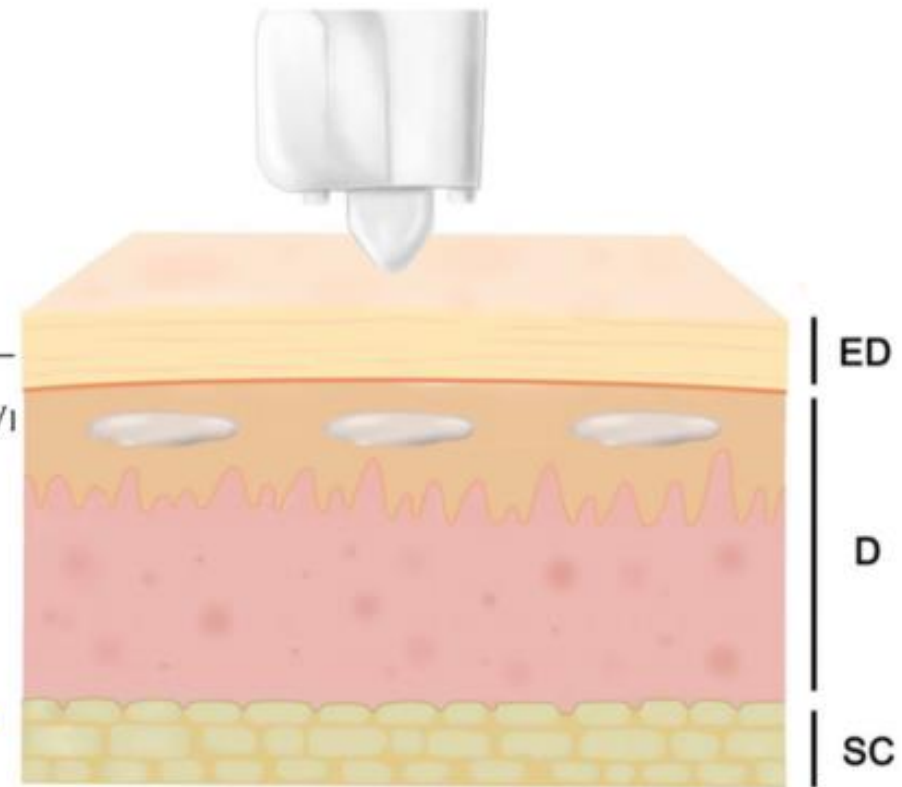
ORIGINAL COMMUNICATION

CLINICAL
ANATOMY

Wi

A novel needle-free microjet drug injector using Er:YAG LASER: A completely new concept of transdermal drug delivery system

Jong-Jin Lee¹ | Kyu-Ho Yi^{1,2} | Heon-Soo Kim² | Min Ho An³ | Kyle K. Seo⁴
Huh Chang-Hun⁵ | Hee-Jin Kim¹



Lee, J.-J., Yi, K.-H., Kim, H.-S., An, M. H., Seo, K. K., Chang-Hun, H., & Kim, H.-J. (2022). A novel needle-free microjet drug injector using Er:YAG LASER: A completely new concept of transdermal drug delivery system. *Clinical Anatomy*, 1–4. <https://doi.org/10.1002/ca.23892>

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Thank you

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