

PDRN / PN

Innovative Regeneration Technology

High-purity patented technology

BR PHARM's PDRN/PN is different

Safe raw
material
traceability

High purity
PDRN/PN

Pharmaceutical
grade GMP
facility

BR PHARM's PDRN/PN is a 'high-purity raw material' extracted using patented technology from salmon trout raised in a land-based aquaculture system with clean seawater. It is thoroughly inspected to ensure that contamination from bacteria, viruses, parasites, heavy metals, and radiation is fundamentally prevented.

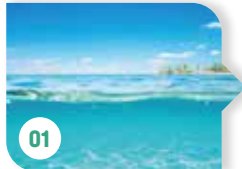




Clean Raw material Aquaculture Facility

To block contaminants, we filter the clean seawater from Namhae(southern sea) and utilize an EM (Effective Microorganisms) filtration system for our aquaculture water.

This allows us to safely farm salmon trout through eco-friendly practices, without the use of antibiotics.



01

Using pure Seawater from Namhae



02

Sand filtration system



03

Recirculating filtration system



04

Sea water temperature control system



05

Salmon trout farming



Seafood Safety Evaluation

- The Jeollanam-do Institute of Marine and Fisheries Science and Chonnam National University conducted **evaluations on over 150 criteria**, including radiation, heavy metals, and microorganisms, resulting in a safety '**compliance**' judgment. (Conducted 4 times a year) Ensures safety and quality through the '**Fishery Product Traceability System**', which verifies the source of seafood.

수산물 안전성조사 결과 통보서

| | | | |
|--|----------|------------|----|
| 방사능(¹³⁷ I) | 불검출 | 100Bq/kg이하 | 적합 |
| 방사능(¹³⁷ Cs+ ¹³⁴ Cs) | 불검출 | 100Bq/kg이하 | 적합 |
| 수은(어류) | 0.0mg/kg | 0.5mg/kg이하 | 적합 |
| 납(어류) | 0.0mg/kg | 0.5mg/kg이하 | 적합 |
| 카드뮴(해양어류) | 0.0mg/kg | 0.2mg/kg이하 | 적합 |

수산물 안전성조사 결과 통보서 (Right side document)



HACCP(Hazard Analysis Critical Control Point)certification in Goheung-gun, Jeollanam-do



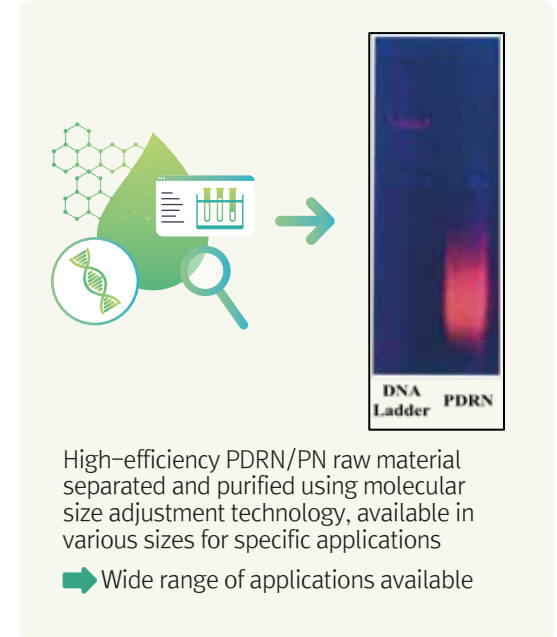
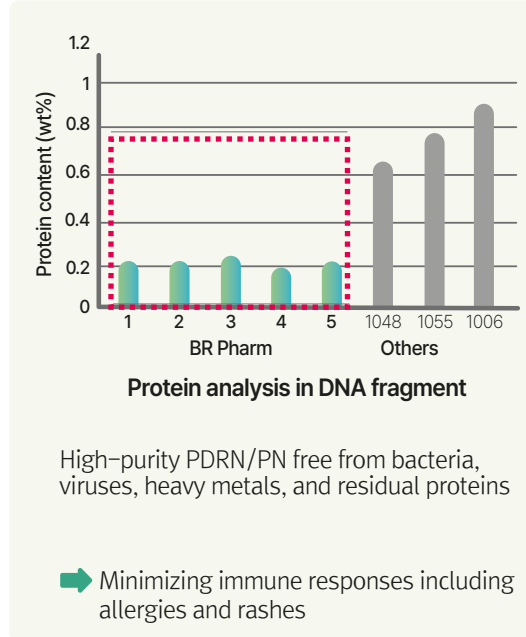
Ensures quality and safety by verifying the source and distribution path of marine products

2. High-purity raw material extraction

BR PHARM's High Purity PDRN/PN Raw Material



High-purity extract patent (KR Patent No. 10-2053221)



Fish farming



Extraction



Separation




Purification




3. Products manufactured in a pharmaceutical grade GMP facility

BR PHARM's High Purity PDRN/PN Raw Material



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Comprehensive management of manufacturing and quality control from raw material sourcing to finished product shipment is conducted under pharmaceutical-grade standards
- 

Risk-management measures are implemented to prevent external contamination and minimize cross-contamination and microbial contamination, etc.
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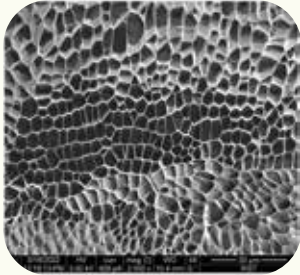
Active Pharmaceutical Ingredients (API) approved by the Ministry of Food and Drug Safety (MFDS)



MECHANICAL ACTION

Structural support

1)



* PN (Polynucleotide) has viscoelastic properties and forms a 3D structure and physical support in the dermal layer

* Raw material properties



PHYSICAL ACTION

Hydration



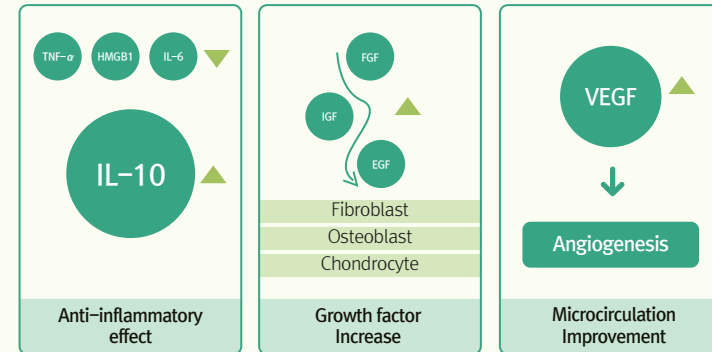
* PDRN/PN has moisture-binding capabilities that help maintain skin hydration



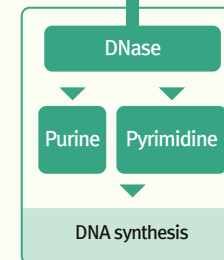
BIOLOGICAL ACTION

: A2A receptor agonist

A2A receptor stimulation

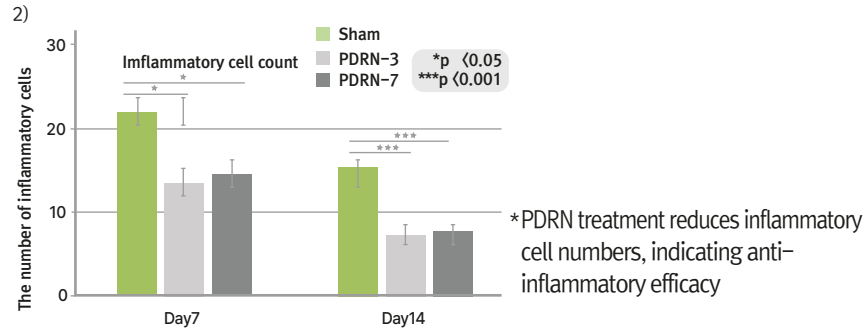


Salvage pathway

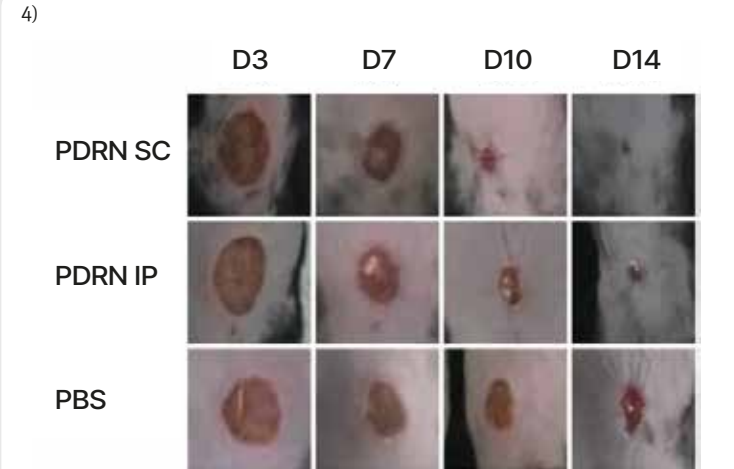


*PDRN selectively acts on A2A receptors to promote rapid tissue regeneration and wound healing

Anti-inflammation

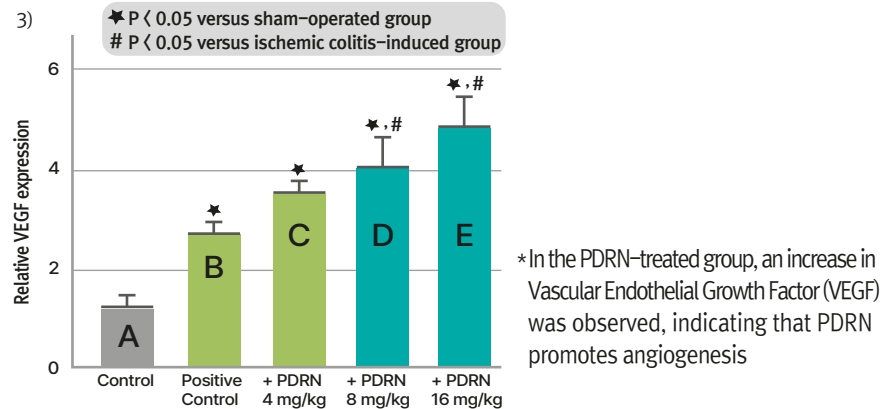


Fibroblast proliferation



*The group injected with PDRN showed faster wound healing compared to the control group

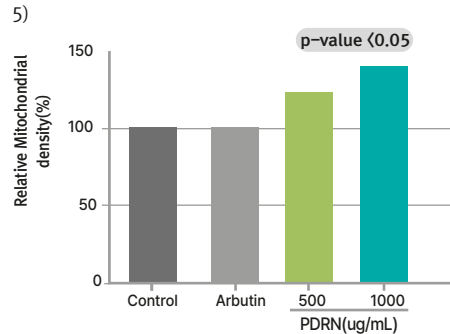
Angiogenesis



6. PDRN / PN Study - Anti-aging /Aesthetic

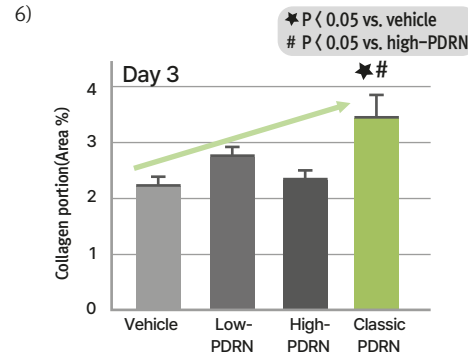
BR PHARM's High Purity PDRN/PN Raw Material

Anti-aging Anti-oxidant



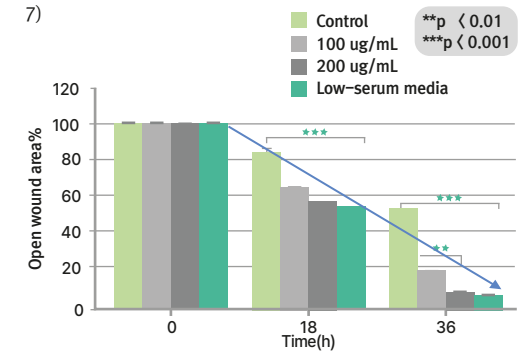
* Compared to Arbutin, an ingredient with antioxidant properties, PDRN demonstrates superior antioxidant effects
* Mitochondrial density \propto aerobic capacity

Stimulate Collagen



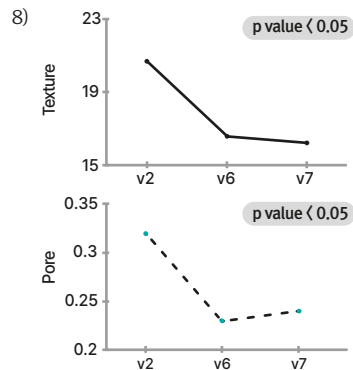
* In the PDRN injection group of all molecular weights, an increase in collagen synthesis was observed compared to the control group

Cell regeneration



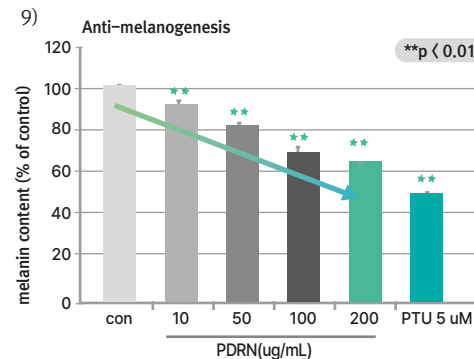
* Cell regeneration occurs more rapidly in the PDRN treated group compared to the control group at the same time point

Aesthetic Skin condition



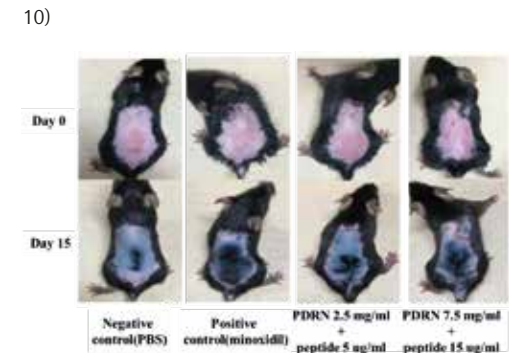
* Improvement in skin texture and reduction in pore size were observed after PDRN injection

Whitening



* An increase in PDRN concentration leads to a decrease in tyrosinase activity, resulting in a reduction in melanin concentration, which contributes to a lighter skin tone

Hair loss relief



* Co-treatment of the hair growth-promoting peptide and PDRN resulted in similar hair growth effects as observed in the positive control group

5) Applied Biochemistry and Biotechnology (2020) 191:540 – 554

8) Aesth. Plast. Surg. 2022 Feb;46 Suppl 3

6) MOLECULAR MEDICINE REPORTS 18: 5166–5172, 2018

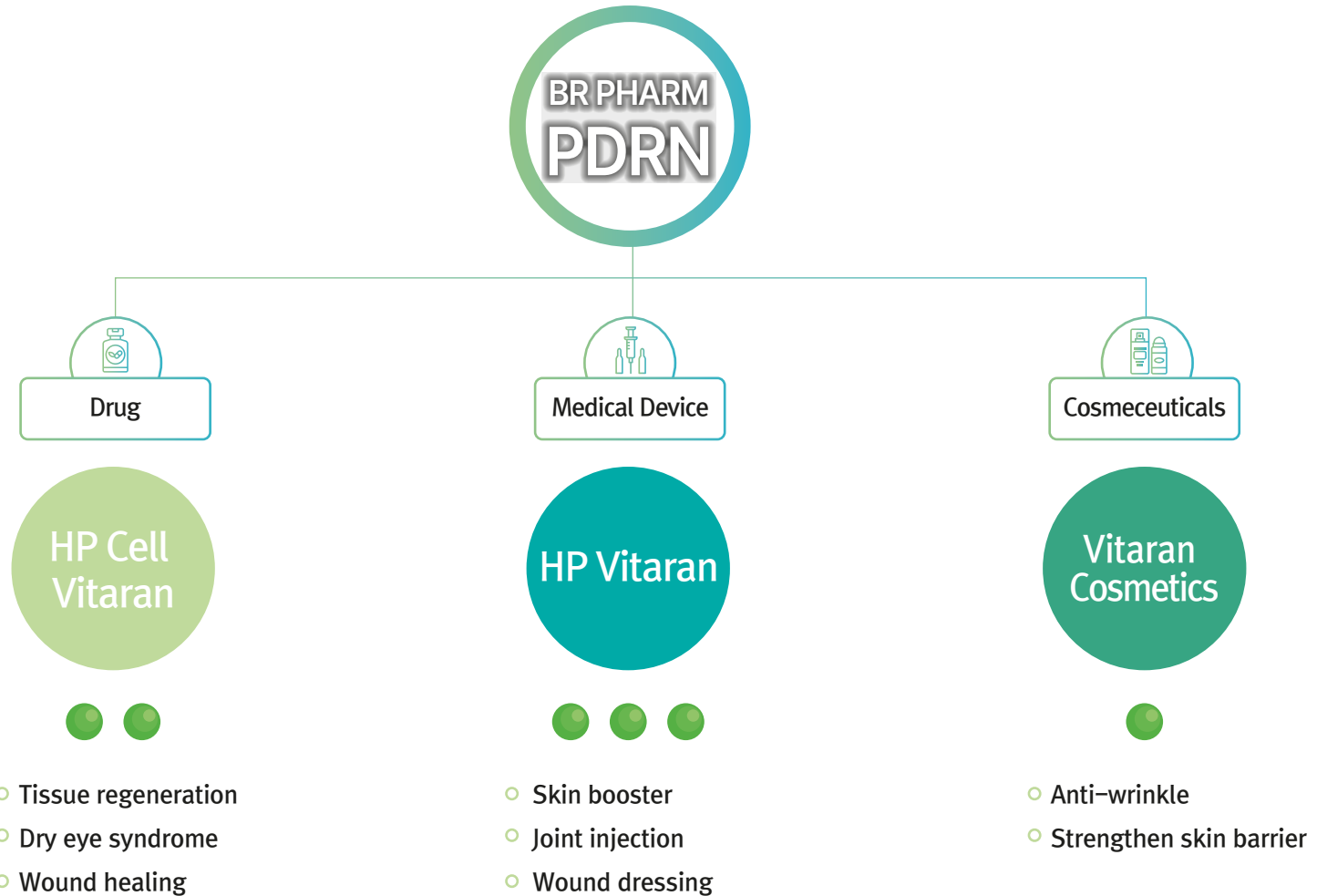
9) Int. J. Mol. Sci. 2022, 23, 13525. <https://doi.org/10.3390/ijms232113525>

7) Int. J. Mol. Sci. 2022, 23, 13525. <https://doi.org/10.3390/ijms232113525>

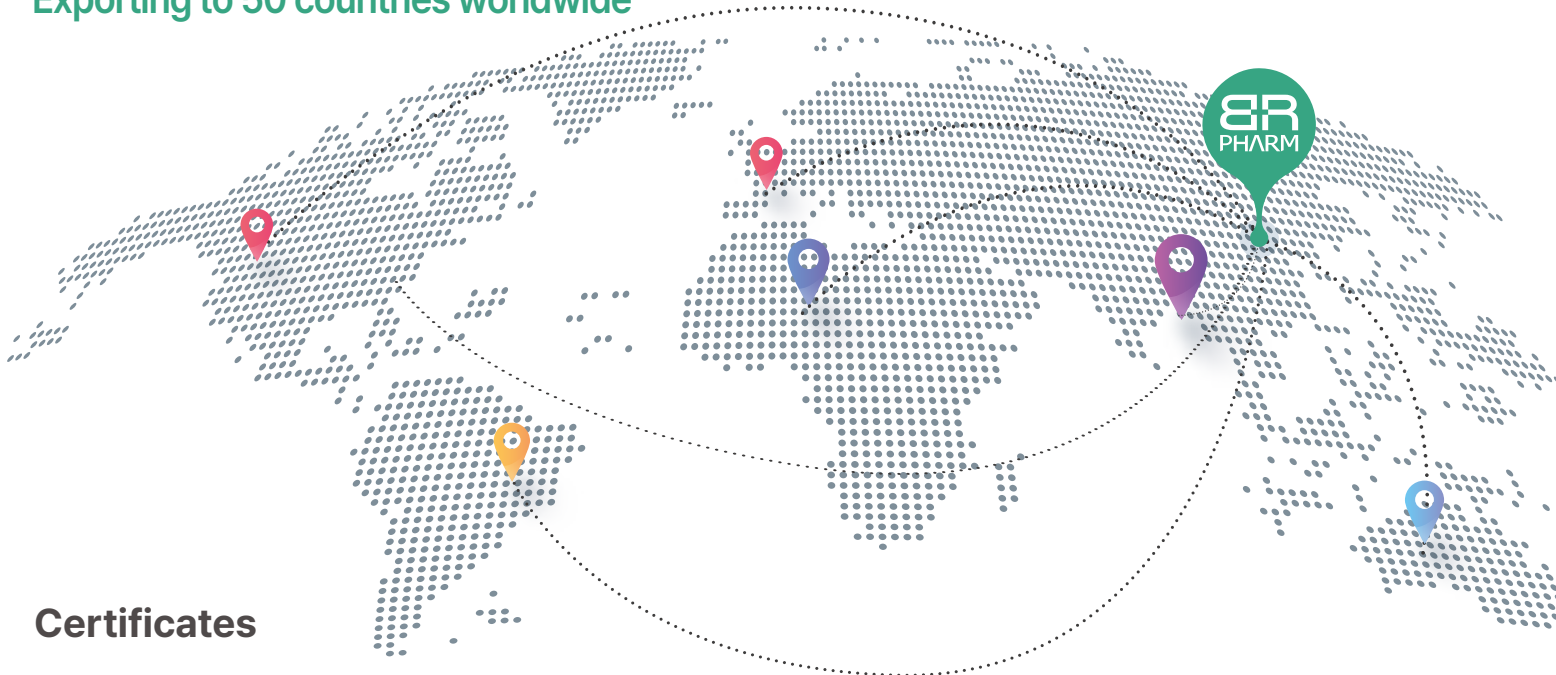
10) COMPOSITION FOR PREVENTING HAIR LOSS OR PROMOTING HAIR REGROWTH, PCT/KR2020/011318

* This efficacy is limited to the properties of the raw material

- Molecular weight ●



Sales Network
Exporting to 50 countries worldwide



Certificates



HACCP



GMP



ISO 13485



CE



Patent

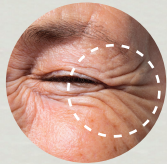
Product Line



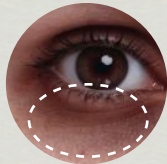
| | HP VITARAN <i>i</i> | HP VITARAN | HP VITARAN <i>S</i> |
|----------------|--|-------------------|--|
| Ingredient | PN (PolyNucleotide) 20mg/mL | | |
| Viscosity | ● ○ ○ | ● ● ○ | ● ● ● |
| Treatment Area | Around the eyes Thin and sensitive skin areas | Entire Face | Scars (Ice pick Scars, Boxcar Scars, Rolling Scars) |
| Specification | 1mL syringe x 1ea | 1mL syringe x 2ea | 1mL syringe x 1ea |
| Needle | 34G 4mm x 1ea | 33G 4mm x 2ea | 30G 13mm x 1ea |
| Storage method | Store at room temperature (1~30°C), protected from light | | |
| Shelf Life | 36month from manufacturing date | | |



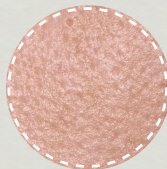
Treatment Area



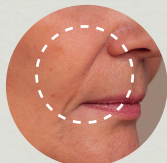
WRINKLES AND FINE LINES



DARK EYE CIRCLES



ENLARGED PORES



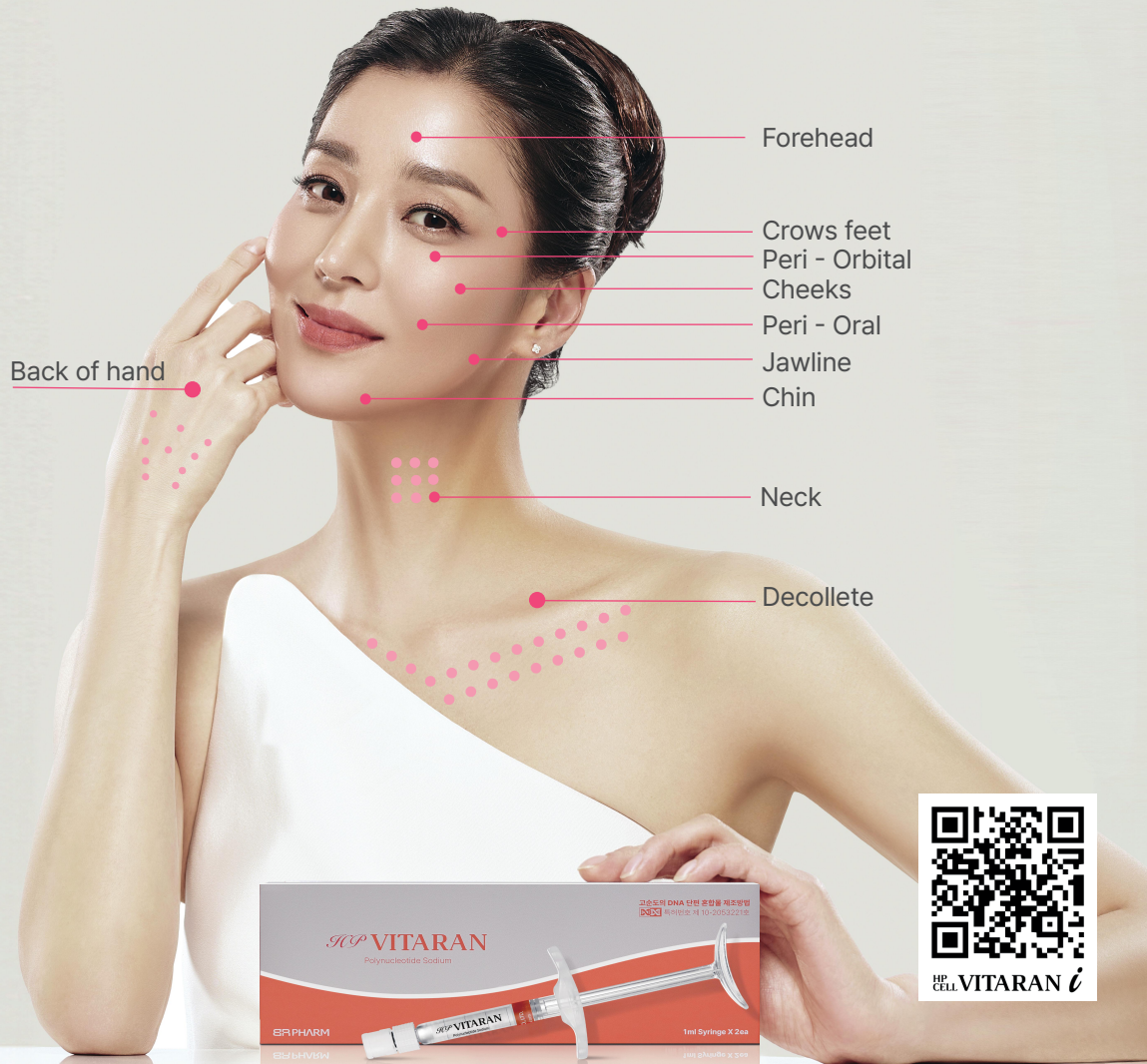
SKIN LAXITY



STRETCH MARKS



BACK OF HAND



HE CELL VITARAN

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Tomorrow*

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