



# BIOHEAL: The Definitive Bio-Regenerative Solution

*Deep Repair. Intense Hydration. Uncompromised Comfort.*

BioHeal represents a shift from traditional aesthetic corrections to advanced bio-engineering. It is a multi-dimensional formulation designed to address the core mechanisms of skin aging—dermal atrophy, cellular senescence, and compromised barrier function—by stimulating the skin's intrinsic healing capabilities.

## THE AGING CASCADE

**\*\*Dermal Atrophy\*\*:** Thinning of the support structure.



**\*\*Dehydration\*\*:** Chronic moisture loss and fragility.



**\*\*Cellular Senescence\*\*:** Sluggish repair mechanisms.

## THE BIOHEAL IMPERATIVE



**Reconstruct:** Rebuilds dermal architecture via collagen/elastin stimulation.



**Replenish:** Floods tissue with essential moisture for volume.



**Revitalize:** Awakens dormant cellular function for luminosity.



**Comfort:** Ensures a pain-free application via integrated Lidocaine.

# The Regenerative Architect: Polynucleotide (PN) at 25 mg/mL

Derived from purified DNA fragments, PN acts as a biological scaffold and potent stimulant for self-repair.

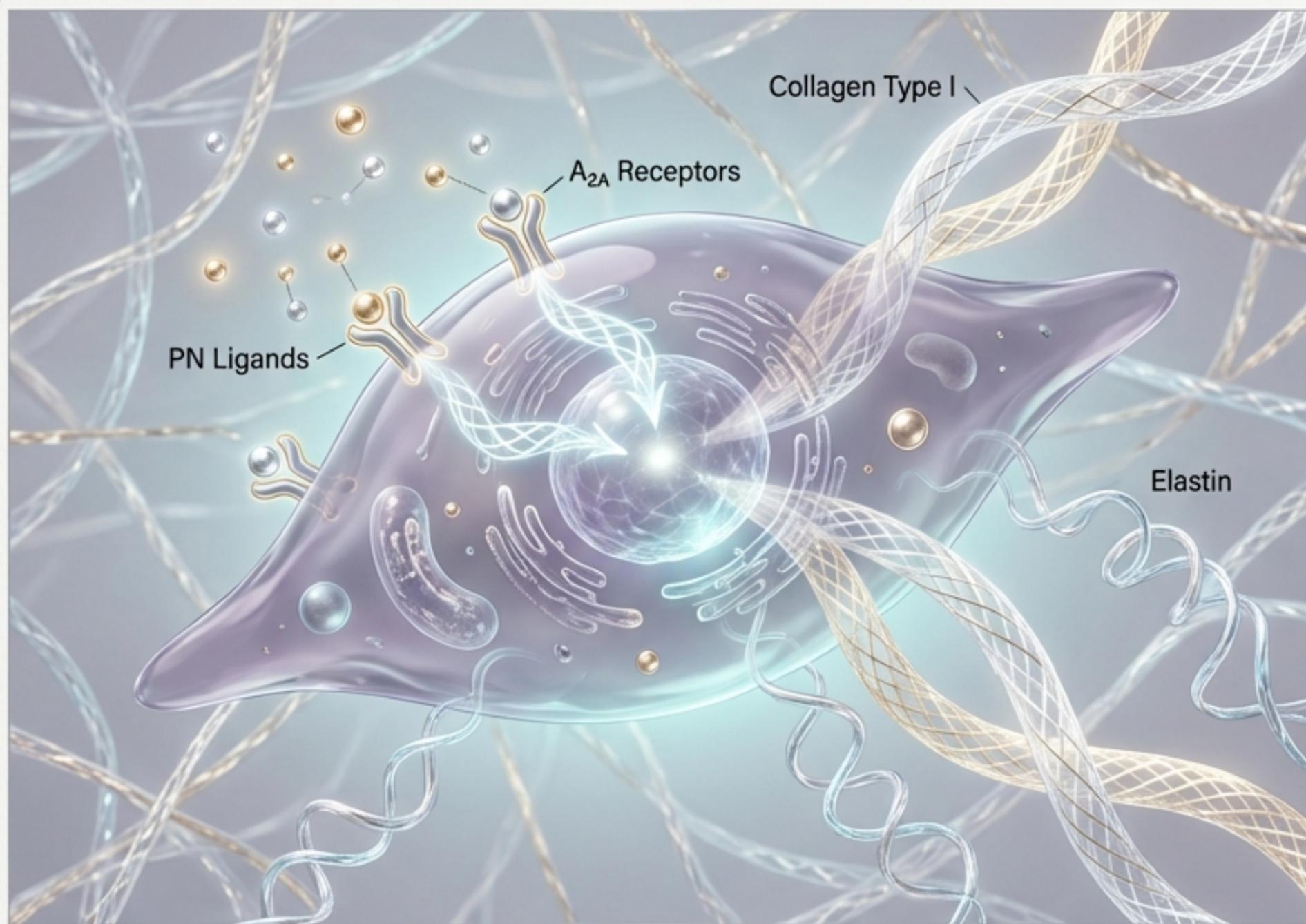


Figure 1: Fibroblast Activation Pathway

## MECHANISM OF ACTION

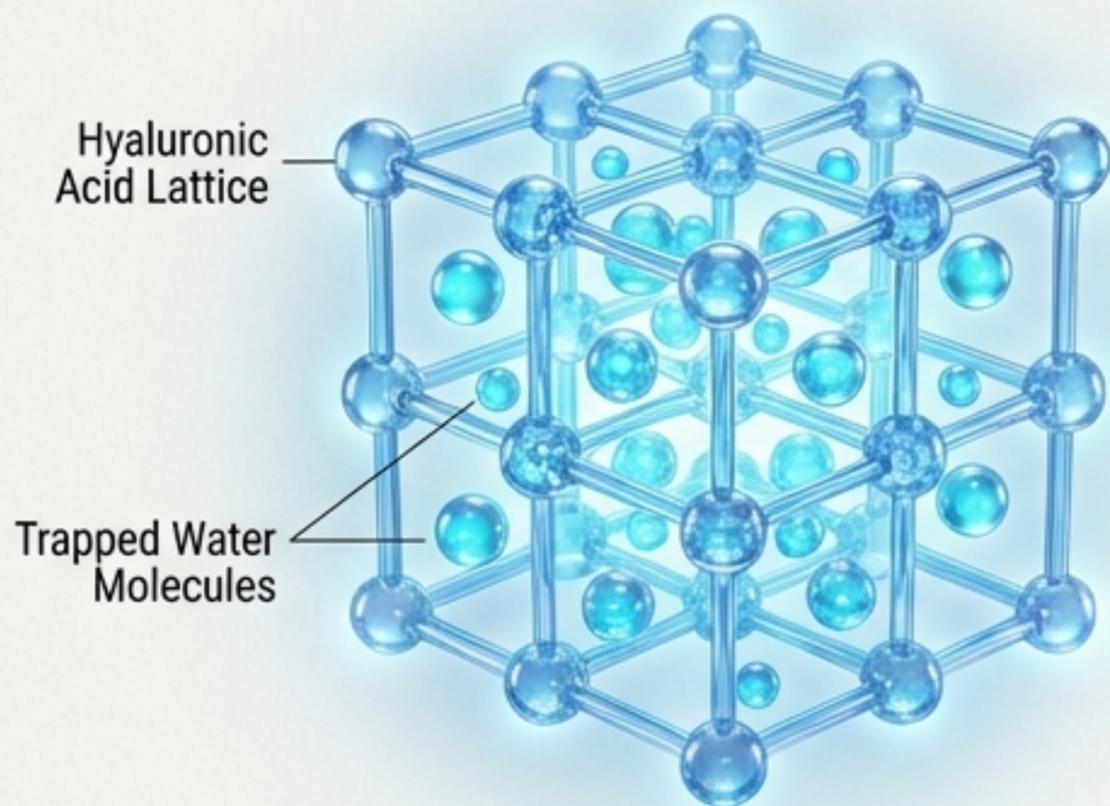
- **Receptor Activation:** PN acts as a ligand for A2A adenosine receptors on fibroblasts.
- **Fibroblast Stimulation:** Activation triggers a signaling cascade promoting cell growth, differentiation, and metabolic activity.

## BIOLOGICAL OUTPUT

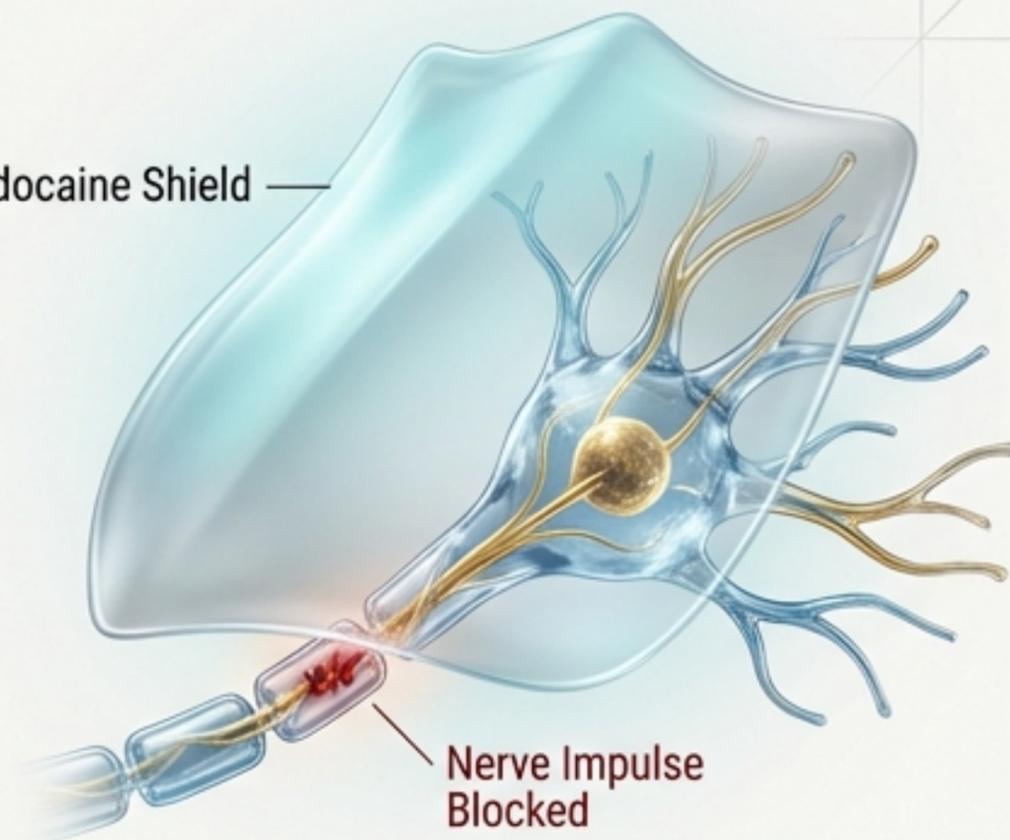
- **ECM Remodeling:** Promotion of Extracellular Matrix organization for a denser dermal structure.
- **Synthesis Boost:** Significant increase in new collagen fibers and elastin production.
- **Angiogenesis & Anti-Inflammatory:** Stimulation of microcirculation for nutrient delivery and reduction of redness/swelling.
- **Antioxidant Protection:** Neutralization of free radicals to prevent oxidative stress.

**CLINICAL BENEFITS:** Visible thickening of the dermis, enhanced elasticity, reduction of fine lines, and accelerated tissue repair.

# Synergistic Hydro-Balance & Uncompromised Comfort



PN + HA > Sum of Parts



## COMPONENT 1: THE MOISTURE MAGNET (HA 10 mg/mL)

-  **Function:** A bio-identical humectant for immediate plumping and sustained hydration.
-  **Action:** Hygroscopic capacity (binds 1,000x weight in water) provides volumetric support, filling spaces between collagen fibers.
-  **Cellular Support:** Creates the optimal physiological environment for fibroblast activity and acts as a carrier for PN distribution.

## COMPONENT 2: THE COMFORT AGENT (Lidocaine 3 mg/mL)

-  **Mechanism:** Reversibly blocks sodium ion channels in nerve membranes to prevent impulse conduction.
-  **Benefit:** Allows for precise treatment in sensitive areas with minimal patient discomfort.

## THE SYNERGY (PN + HA)

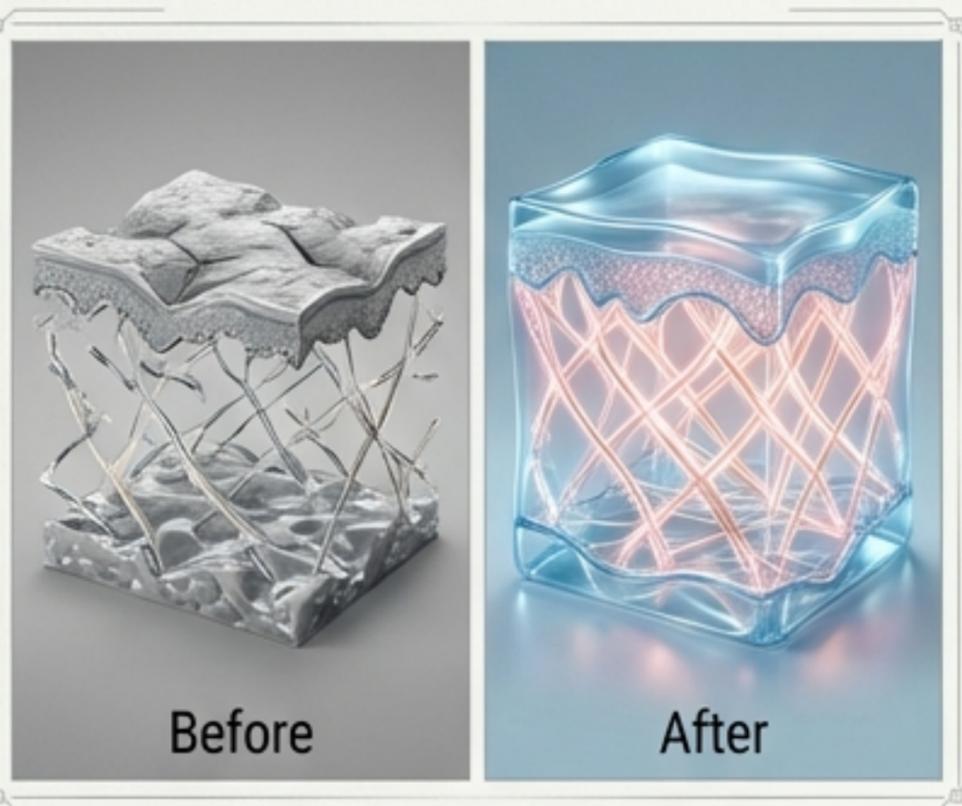
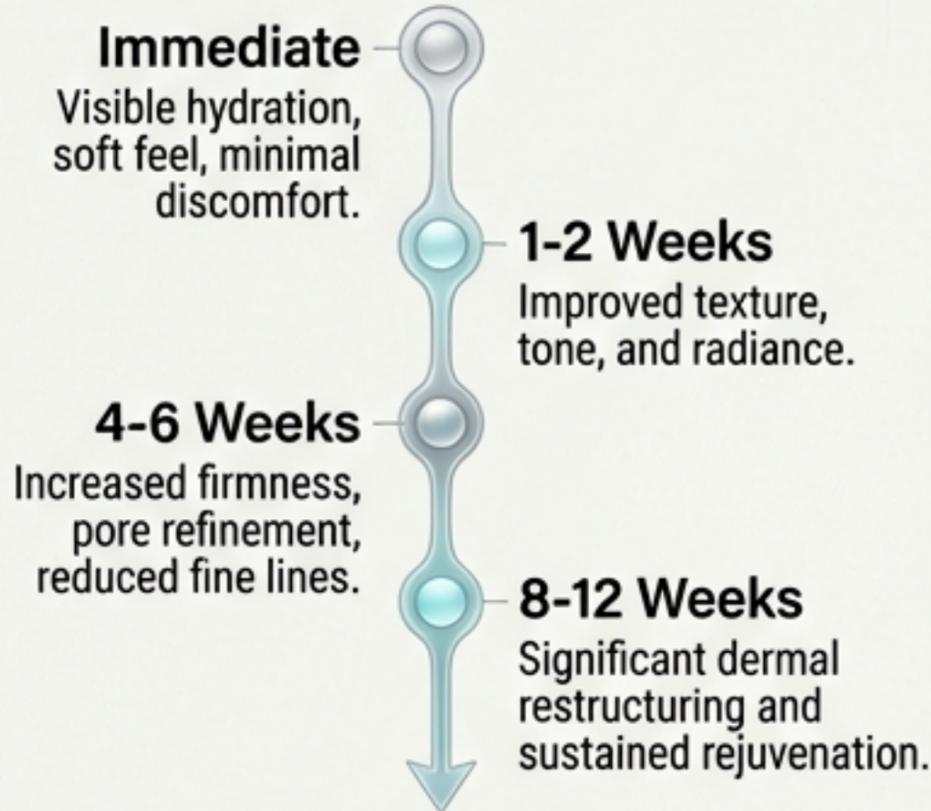
-  **HA as Bio-Carrier:** Ensures bioavailability of PN across dermal layers.
-  **PN Optimizes Retention:** Strengthened ECM improves the skin's intrinsic ability to hold the moisture provided by HA.
-  **Dual Action:** PN reconstructs deep architecture while HA plumps the surface for comprehensive rejuvenation.

# Clinical Applications & Transformative Outcomes

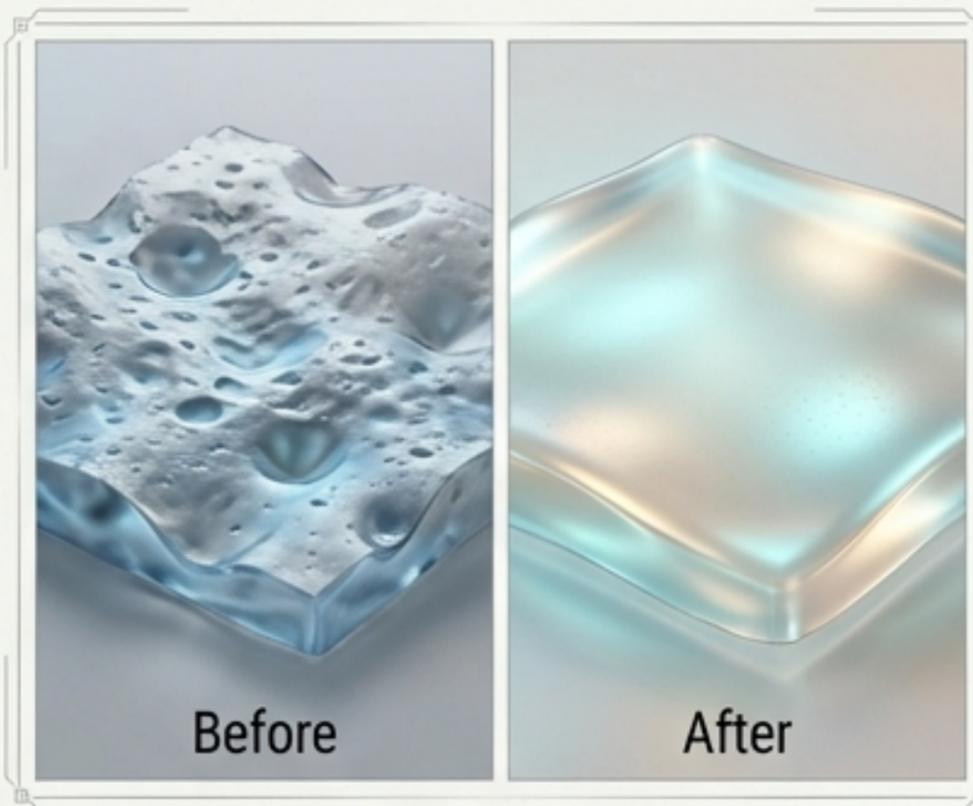
## INDICATIONS (Target Profiles)

- ✦ Early & Advanced Aging
- ✦ Compromised/Fragile Skin Barrier
- ✦ Dehydrated/Dull Complexion
- ✦ Photoaging & Textural Irregularities
- ✦ Scar Improvement (Acne/Superficial)
- ✦ Pre/Post-Procedure Optimization

## EXPECTED OUTCOMES TIMELINE



Cross-Section Analysis



Surface Texture

Polynucleotide (PN)	Hyaluronic Acid (HA)	Lidocaine	Application
25 mg/mL	10 mg/mL	3 mg/mL	Intradermal or subcutaneous injection by qualified practitioners.