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Regeria™ and Folliclone™ transdermal anti-aging and advanced niosomal alopecia hair restoration patches and Bombino™ bath capsules

Business Proposal.

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Rather than pursuing traditional oral or standard topical delivery methods—which suffer from poor bioavailability, enzymatic degradation in the digestive tract, and low skin penetration—our venture utilizes an advanced *Niosomal Transdermal Delivery System*. By encapsulating our proprietary active biological extracts into nanometer-sized non-ionic surfactant vesicles (niosomes) we achieve direct, controlled, systemic absorption through the stratum corneum, which is the outermost layer of the epidermis, acting as the body's primary physical barrier against the external environment. This dramatically increases therapeutic efficacy, minimizes active ingredient waste, and establishes a highly defensible, high-margin product line in the premium anti-aging and alopecia markets.

1. The Technological Edge: Niosomal Matrix vs. Traditional Skincare

To convince sophisticated investors, we clearly draw the distinction between our technology and standard over-the-counter beauty products.

The Narrative for Investors: "Traditional cosmetics fail because the skin's outermost layer, the stratum corneum, acts as a highly effective barrier against large molecules. Up to 95% of active ingredients applied via standard creams or serums never penetrate deep enough to produce cellular change.

Our technology completely bypasses this limitation. By chemically engineering non-ionic surfactant vesicles (niosomes), we create a bilayer structure that mimics natural cell membranes. These nanosomes temporarily fluidize the skin's lipid bilayers, allowing our highly concentrated active biological extracts to pass through seamlessly. Embedded inside a hydrogel matrix patch, the active

ingredients are protected from ambient oxygen and light, ensuring a continuous, sustained release over several hours rather than a fleeting topical application."

2. Product Line Diversification: Regeria and Folliclone

We position this venture not as a single-product company, but as a robust transdermal platform capable of addressing multiple multi-billion-dollar markets using the exact same manufacturing infrastructure.

Regeria Nocturnal Matrix Patches which will be targeting and triggering systemic and deep-tissue-facial anti-aging mechanisms , these patches are precision die-cut to follow natural body and facial contours. Designed specifically for overnight use, the hydrogel sheet prevents moisture evaporation while ensuring a slow, 6-to-8 hour diffusion of cellular regenerative factors directly into the skin layers while the body rests.

Folliclone Capillary System Targeting androgenetic alopecia and hair thinning. Using the exact same pilot line equipment, the die-cutting process uses custom-fabricated stamping tools to shape thin, rigid, comb-like matrix inserts. These inserts are designed to fit directly into wearable caps or applicator devices. The specialized comb geometry bypasses the hair barrier, placing the active niosomal formulation in direct, unhindered contact with the scalp and hair follicles to stimulate localized angiogenesis (blood vessel growth) and cellular repair.

3. Step-by-Step Pilot Line Operational Workflow

This operational outline shows investors that we have a highly controlled, repeatable, and scalable standard operating procedure (SOP).

Step A: Nano-Encapsulation Loop Organic phase lipids (surfactants and cholesterol) are completely stripped of solvent using the vacuum rotary evaporator to build a pristine, ultra-thin dry lipid film. The proprietary aqueous biological extract is introduced under precise thermal control. High-shear sonic homogenization then breaks down the resulting vesicles until we hit our target nanoscale size window, verified via optical inspection.

Step B: De-Aerated Matrix Integration The active nanosomes are fed into the hydrogel base. The overhead stirrer operates under a continuous vacuum seal, pulling out microscopic air bubbles. This is an essential quality control step;

eliminating air pockets guarantees that every single square millimeter of the finished patch contains an identical, unvarying dosage of active ingredient.

Step C: Precision Cast and Thermal Curing The uniform matrix is laid onto a moving silicone carrier liner via an automated doctor blade. The micrometer adjustments keep the wet film perfectly level. The liner passes through a low-temperature digital vacuum drying oven, removing wetness without overheating or destroying the biological integrity of our active components.

Step D: Shape Stamping and Packaging The dry, active matrix is immediately laminated with a protective medical-grade backing layer to lock in the ingredients. The sheet passes under a pneumatic die-cutter where custom-engineered steel dies instantly stamp out either the Regeria facial/body contour patches or the Folliclone scalp inserts. Patches are immediately sealed in airtight foil pouches to ensure proper preservation of final product.

Here is the copy-ready text covering the expansion of your platform into **effervescent biological bath products (dissolvable herbal bath capsules / bath bomb technology)**, integrated into the same investor framework.

3. Product Line Expansion: Bombino™ Effervescent Biological Bath Capsules

To capture a broader segment of the premium wellness and full-body anti-aging market, the niosomal platform expands beyond localized patches into full-body transdermal therapies via specialized bath delivery systems.

The Concept: Unlike traditional, purely cosmetic bath bombs that rely on simple baking soda, citric acid, and artificial dyes, our product lines utilize a specialized, dry-compressed effervescent matrix designed as a delivery vehicle for advanced biologicals. These are engineered as fast-dissolving, water-soluble capsules or concentrated effervescent tablets. When dropped into warm bath water, they initiate a controlled chemical reaction that rapidly releases and disperses encapsulated active botanical and biological extracts across the entire volume of water.

4. The Investor Narrative: Full-Body Transdermal Absorption

The Pitch to Investors: "By introducing effervescent Bombino biological bath capsules, we are transforming a standard luxury routine into a highly effective, full-body therapeutic treatment.

When our specialized Bombino capsule dissolves in a warm bath, the heat of the water naturally dilates the user's pores and increases peripheral blood circulation across the entire surface area of the body. Simultaneously, our encapsulated niosomes are released into the water. Because these niosomes are structurally engineered to penetrate the lipid barrier of the skin, the entire body becomes an active absorption zone. This delivers unparalleled full-body skin rejuvenation, cellular hydration, and deep tissue relaxation that cannot be achieved by localized topical creams or standard over-the-counter bath products."

5. Integrated Pilot Production Infrastructure of Bombino bath tablets or capsules

A major selling point for investors is the manufacturing efficiency: this product's expansion utilizes much of the exact same compounding and preparation equipment already established in our pilot laboratory.

- **Vesicle Preparation:** The core of active biological extracts for Bombino capsules are nano-encapsulated using the exact same rotary evaporator and ultrasonic homogenizer setup used for the Regeria and Folliclone patches. This ensures the active ingredients remain stable and do not degrade when exposed to the moisture or air during storage.
- **Dry Powder Blending:** Instead of mixing the niosomes into a wet hydrogel polymer matrix, the stable, lyophilized (freeze-dried) niosomal powder is blended with an anhydrous (water-free) effervescent base consisting of pharmaceutical-grade sodium bicarbonate and organic citric acid.
- **Compression and Tableting:** The mixed dry compound is fed into a benchtop pneumatic tablet press or capsule-filling machine. Using custom geometric molds, the powder is compressed under high pressure into solid, ultra-dense, fast-dissolving capsules or compact tablets, completely eliminating the need for water during the manufacturing phase to prevent premature activation.

6. Strategic Market Positioning

By adding dissolvable biological bath products to the portfolio, we present investors with a comprehensive, three-tiered ecosystem:

- **Regeria:** Highly targeted, intensive overnight facial rejuvenation (Premium Skincare Market).
- **Folliclone:** Precision, localized scalp and hair follicle restoration (Alopecia and Hair Care Market).
- **Bombino - Biological Bath Capsules or tablets :** Whole-body wellness, anti-aging, and therapeutic relaxation (Luxury Spa and Longevity Market).

This diversified approach maximizes laboratory utilization, lowers the cost of customer acquisition, and offers multiple high-margin revenue streams under a unified, advanced transdermal delivery brand.

7. Bombino formula is using the Advanced Formulation Physics: The Effervescent Vehicle

To ensure investors understand that this is a highly engineered biomedical delivery system rather than a standard consumer bath novelty, we define the exact chemical mechanics of the effervescent matrix.

The Narrative for Investors: "Our dissolvable bath delivery system relies on a meticulously calibrated anhydrous (water-free) acid-base reaction. We utilize ultra-pure, pharmaceutical-grade Sodium Bicarbonate ($NaHCO_3$) as the base, paired with anhydrous Citric Acid ($C_6H_8O_7$). The particle size of these raw powders is strictly controlled via laboratory sieving to guarantee a uniform, steady dissolution rate.

The moment the capsule contacts warm water, a rapid neutralization reaction occurs, liberating carbon dioxide gas (CO_2). This effervescent action serves a vital mechanical function: it acts as a self-propelling, micro-fizzing dispersion mechanism that instantly distributes our encapsulated niosomes uniformly throughout the bath water, preventing them from clumping, sinking, or adhering to the walls of the tub."

8. Safeguarding Delicate Biologicals: Lipid Shielding

A common technical hurdle in premium bath products is the rapid degradation of fragile active ingredients when exposed to open air, humidity, or high

temperatures. We address this vulnerability directly through multi-layer lipid shielding.

9. The Technical Framework:

- **Anhydrous Manufacturing Isolation:** Our production workflow operates under strict humidity-controlled conditions (below 30% relative humidity). Because no water is introduced during the blending phase, the effervescent reaction remains completely dormant until the end-user introduces it to the bath.
- **Dual-Layer Vesicular Protection:** The active biological extracts and therapeutic essential oils are first locked inside the hydrophobic cores and lipid bilayers of our engineered niosomes. These non-ionic surfactant vesicles act as an initial physical shield, protecting the delicate peptides, proteins, and volatile compounds from oxidation during long-term storage.
- **Airtight Unit Packaging:** Once compressed into dense capsules or tablets using our benchtop press, each individual unit is immediately flash-sealed into an airtight, nitrogen-purged foil pouch. This completely eliminates exposure to atmospheric oxygen and ambient moisture, ensuring a commercial shelf life exceeding two years without any loss of biological potency.

10. Expanded Pilot Production Workflow for Bombino Effervescent Line

This section shows exactly how the existing laboratory footprint expands into dry-form production with minimal friction.

- **Step A: Niosomal Lyophilization (Freeze-Drying):** The liquid niosomal suspension prepared via our rotary evaporator and ultrasonic homogenizer is combined with a natural cryoprotectant (such as lactose or mannitol) and freeze-dried. This turns the liquid vesicles into a highly stable, free-flowing dry nano-powder.
- **Step B: High-Uniformity Dry Blending:** The dry niosomal powder, the effervescent base components, and any natural binding agents are introduced into a specialized benchtop V-blender. This geometric blending method prevents the shear-sensitive niosomes from breaking apart while achieving absolute structural homogeneity throughout the powder mix.
- **Step C: High-Pressure Mechanical Tableting:** The dry blend is transferred directly to an automated benchtop single-punch tablet press. The press applies up to 5 to 10 tons of pneumatic pressure, compressing the loose

powder into ultra-dense, highly durable, solid dissolvable capsules or tablets that will not crumble during shipping.

10. Comprehensive Investor Financial Overview (Multi-Product Platform)

This pitch summary ties all three components—Regeria, Folliclone, and Bombino—into a single, highly lucrative, low-risk corporate roadmap.

The Financial Synthesis for Investors: "By developing an agile, multi-product laboratory platform, our Biogerone LLC company achieves unprecedented capital efficiency. We have engineered a single, core scientific asset—our proprietary niosomal transdermal delivery technology—and successfully translated it into three high-demand, high-margin commercial verticals.

- **Regeria Patches** capture the premium, target-specific body and facial aesthetics market.
- **Folliclone Inserts** target the massive, high-retention hair restoration space.
- **Bombino Biological Bath Capsules** capture the rapidly growing, full-body longevity and luxury spa tourism market.

Because all three product lines share the exact same upstream equipment—the rotary evaporator, high-shear homogenizer, and vacuum analytics—your investment does not just fund a single product. It establishes a highly versatile, state-of-the-art biotech pipeline capable of generating immediate revenue across three separate industries, while maintaining a lean operational budget and an exceptionally high barrier to entry for competitors."

Here is a complete, structured breakdown of the primary equipment required for a benchtop niosome processing facility, detailing vendor sources, sequential installation ordering, and realistic technological cost estimations.

Pilot Regeria/Folliclone/Bombino Production Line Blueprint

Target: 10,000 Patches/5,000 capsules-tablets a day

To validate the formulation, complete stability testing, and provide initial market samples for strategic partners, we will establish a controlled benchtop pilot line. This setup minimizes initial capital expenditure while ensuring precise control over vesicle size distribution and uniform matrix coating thickness.

Annual Cost & Proposal Quote for First Production Line

This quote details the essential laboratory instrumentation required to fully establish the initial 10000-patch-per-day validation and pilot manufacturing line.

Target Output: 10,000 high-uniformity transdermal matrix patches per day

Equipment Category	Technical Specification	Estimated Budget (USD)
Vesicle Preparation	Benchtop Rotary Evaporator with digital vacuum controller & recirculating chiller	\$8,500
Vesicle Homogenization	High-Shear Probe Ultrasonic Homogenizer (20kHz, sound-abating enclosure)	\$6,500
Matrix Formulation	Overhead Laboratory Mixer with vacuum degassing attachment	\$6,800
Precision Film Casting	Automatic Benchtop Film Coater with micrometer-adjustable Doctor Blade	\$7,000
Thermal Processing	Digital Vacuum Drying Oven (ambient +5°C to 200°C range)	\$5,800
Precision Singulation	Benchtop Pneumatic/Manual Die-Cutter with custom geometric stamping dies	\$6,500

Equipment Category	Technical Specification	Estimated Budget (USD)
Analytical QA/QC	Digital Thickness Gauges & Benchtop Optical Microscope for matrix inspection	\$4,800
	Turnkey Pilot Laboratory Setup	\$47,900
Lab Rent and utilities:		
\$35,000		
Salaries:		
Lead Scientist		
\$125,000		
Lab personal		
\$175,000		
TOTAL ESTIMATED CAPEX \$382,000		

Strategic Justification for the Investment: "This \$382,000-range initial capital investment allows our Biogerone LLC based laboratory to bypass massive, rigid third-party contract manufacturing organization (CMO) minimums. It grants us total, immediate, in-house control over proprietary formulation adjustments, precise matrix layer consistency, and immediate production of clinical-grade validation samples. This lean operational approach maximizes early equity value, dramatically accelerates our time-to-market, and significantly de-risks the technology prior to high-volume commercial scaling described below.

Advanced Technological Equipment for Sources, and Estimated Costs

Primary Processing Equipment

- **Rotary Evaporator (Benchtop)**
 - *Purpose:* Solvent removal, lipid film formation.
 - *Sourcing Options:* Buchi Labortechnik (R-300 series), Heidolph Instruments (Hei-VAP), IKA Works (RV 8/10).
 - *Estimated Cost:* \$4,500 – \$9,500 (dependent on vacuum controller and glassware configuration).
- **Ultrasonic Homogenizer / Probe Sonicator**
 - *Purpose:* High-energy particle size reduction, vesicle dispersal.
 - *Sourcing Options:* Sonics & Materials (Vibracell), Qsonica (Q500/Q700), Hielscher Ultrasonics (UP200St).
 - *Estimated Cost:* \$3,200 – \$6,500 (includes sound enclosure and titanium probe tips).
- **High-Pressure Homogenizer / Microfluidizer (Benchtop)**
 - *Purpose:* Narrow polydispersity index (PDI), scalable uniform vesicle size.
 - *Sourcing Options:* Microfluidics (M-110P), Genizer (Hand-held or Electric Nano-Disperser), Dyhydromatics.
 - *Estimated Cost:* \$18,000 – \$35,000.
- **Extrusion System (Lipid/Niosome)**
 - *Purpose:* Final size calibration via polycarbonate membranes.
 - *Sourcing Options:* Avanti Polar Lipids (Mini-Extruder), Northern Lipids (Lipex Thermobarrel Extruder).
 - *Estimated Cost:* \$800 – \$4,500 (dependent on manual syringe vs. pressurized nitrogen setup).
- **Dynamic Light Scattering (DLS) Instrument**
 - *Purpose:* Measuring particle size distribution and Zeta potential.
 - *Sourcing Options:* Malvern Panalytical (Zetasizer Advance series), Anton Paar (Litesizer), Brookhaven Instruments.
 - *Estimated Cost:* \$25,000 – \$48,000.
- **Diaphragm Vacuum Pump (Chemical Resistant)**
 - *Purpose:* Vapor regulation for the rotary evaporator.
 - *Sourcing Options:* Vacuubrand (PC 3001), Welch Vacuum, KNF Neuberger.
 - *Estimated Cost:* \$2,500 – \$5,000.
- **Recirculating Chiller**

- *Purpose:* Solvent condensation and temperature stabilization.
- *Sourcing Options:* Julabo (F-series), Huber Minichiller, PolyScience.
- *Estimated Cost:* \$2,200 – \$4,000.

Total Technological Capital Cost Estimate

- **Entry-Level / Essential Configuration:** \$31,200 – \$64,500
 - *Includes:* Rotary evaporator, pump, chiller, probe sonicator, manual extruder, and standard analytical outsourcing or base-model DLS.
- **Advanced / High-Throughput Setup:** \$65,000 – \$112,000
 - *Includes:* Automated microfluidizer, full-scale automated rotary evaporator, integrated chiller/vacuum station, and dedicated high-resolution DLS analyzer.
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Final Processing and Quality Control

8. **Extrusion Assemblies:** Sterilize and mount the stainless steel barrels or gas lines. Install the required pore-size polycarbonate filters.
9. **Dynamic Light Scattering (DLS) System:** Place on a dedicated, vibration-isolated optical bench far from the sonicators or high-pressure pumps to prevent calibration drift. Perform initial validation with standard polystyrene latex spheres.

Chemicals & Surfactants used with corresponding quotes per unit

1. Sorbitan Monostearate (Span 60) The primary non-ionic surfactant used to form the vesicle bilayer membrane wall. Cost: \$60 - \$190 per 1 kg (Depending on reagent vs. pharmaceutical grade)
2. Polysorbate 80 (Tween 80) Secondary hydrophilic surfactant used for tailoring vesicle size and flexibility. Cost: \$40 - \$120 per 1 Liter
3. Cholesterol (95%+ Reagent Grade) The essential membrane stabilizer used to provide rigidity and prevent leakage of the vesicles. Cost: \$140 - \$430 per 1 kg
4. Chloroform (HPLC Grade) The primary organic solvent used to dissolve the lipids and surfactants during thin-film formation. Cost: \$80 - \$150 per 4 Liters
5. Methanol or Absolute Ethanol (ACS Grade) Co-solvent utilized in the organic phase preparation. Cost: \$50 - \$100 per 4 Liters

6. Phosphate Buffered Saline (PBS, pH 7.4) The aqueous phase media used for hydrating the dried lipid film. Cost: \$60 - \$120 per 10 Liters (concentrate or powder packets)

Chemicals Subtotal: \$1,110

List of active Ingredients used in this proposal

Ingredients:	Purpose:
Bioquantine-AXL	Proprietary Core Active Anti-aging Formula
Bioquantine-LC256	Proprietary Anti-Aging Complex/Geroprotector
Proprietary blend of:	
Dr. Denese Caviar Peptide	Introduces amino acid peptides and retinol for skin rejuvenation.
Cell Dyou PDRN EGF Peptide Serum	Provides epidermal growth factors (EGF) to stimulate cellular repair.
Asia c wood Copper Peptides	Copper peptides are highly proven for widening hair follicles and extending the growth cycle.
GD11 Rx SCM Program	<i>See mixing note below.</i> Provides umbilical cord blood stem cell conditioned media to trigger regeneration.
Ki Stem-Cell Exosomes	<i>See mixing note below.</i> Adds plant-derived exosomes to maximize cellular communication at the root.
Proprietary Herbal Extract Liquid	The nourishing, antioxidant-rich aqueous base.