PRODUCT & CLINICAL INTERFACE SPECIFICATION

ADIPOSO™ Clinical Interface & Product Guide

Cryopreserved Adipose-Derived Mesenchymal Stem Cell (ADSC) Exosomes for Topical Aesthetic Formulation

99.91%	84.6 nm	5.2×10¹⁰	<90 s	99.4%
EXOSOME PURITY	MODAL VESICLE SIZE	PARTICLES / ML	FLASH RECONSTITUTION	MEMBRANE INTEGRITY

EXECUTIVE OVERVIEW

ADIPOSO™ represents the next generation in regenerative aesthetics. By utilizing cryopreserved, adipose-derived mesenchymal stem cell extracellular vesicles (exosomes), ADIPOSO delivers standardized paracrine signaling factors directly to targeted dermal layers — outlining the clinical dispensing interface (FUI/HUD architecture), key quality telemetry, and practical aesthetic application protocols.

1 Clinical Interface Architecture (FUI Overview)

Module 1 — Cryogenic Stabilization

Monitors liquid-nitrogen (−196.2°C) storage, cryo-protectant state (trehalose matrix), and thermal stability index (99.8% nominal).

Module 2 — Nanoparticle Tracking (NTA)

Verifies exosome purity (99.91%), particle density (5.2 × 10^{10} /mL), modal vesicle size (84.6 nm), and tetraspanin biomarkers (CD9/63/81+).

Module 3 — Topical Matrix Compounding

Prepares topical vehicle integration (viscosity 1.42 cP, pH 5.52) in a biomimetic crosslinked Hyaluronic Acid carrier base.

Module 4 — Flash Reconstitution

Automates precision 37.0°C thermal equilibration in under 90 s, preserving 99.4% lipid-bilayer membrane integrity.

2 Product Specifications & Telemetry Standards

Parameter	Standard / Target Range	Clinical Significance
Cryo Storage Temp	−196.0°C to −150.0°C (LN_2 Vapor)	Prevents degradation of fragile microRNA and signaling peptides
Vesicle Concentration	5.0 × 10^{10} – 6.0 × 10^{10} / mL	Guarantees therapeutic potency per single-use treatment vial
Mean Particle Size	70 – 120 nm (Peak: 84.6 nm)	Excludes apoptotic cellular debris; pure small-exosome isolate
Membrane Integrity	> 99.0% viable bilayers	Ensures immediate cellular uptake and signaling efficiency
pH Balance	5.50 ± 0.10	Matches the natural acid mantle of healthy post-procedure dermis
Primary Biomarkers	CD9+, CD63+, CD81+, CD29+	Confirms mesenchymal stem-cell extracellular-vesicle origin

3 Aesthetic Application & Clinical Protocols

Protocol Name	Recommended Modality	Target Depth	Biological Mechanism & Cargo
Chrono-Reversal Protocol	Post-Fractional Laser / Deep Ablation	0.25 – 0.50 mm	Stimulates Pro-Collagen I & Collagen III splicing and rapid elastin synthesis for deep tissue remodeling.
Dermal Barrier Restoration	Post-Peel / Ultra-Sonic Infusion	Stratum Corneum	Upregulates ceramides, fibronectin, and anti-inflammatory cytokines to eliminate erythema.
Neo-Vascular Tone Protocol	Radiofrequency (RF) Microneedling	0.50 – 1.00 mm	Delivers angiogenic microRNA (miR-126, miR-21) and VEGF factors to accelerate deep skin recovery.

4 Standard Operating Procedure · Directions

STEP 1
Authenticate & Check
Scan the cryo lot barcode to verify donor clearance, batch sterility, and nanoparticle count (>5.0 × 10^{10}/mL).

STEP 2
Controlled Thawing
Flash-equilibrate the cryo-vial at 37°C in 74 s to prevent ice recrystallization.

STEP 3
Matrix Compounding
Select treatment viscosity on the HUD to blend exosomes into the sterile HA carrier matrix.

STEP 4
Transdermal Application
Massage or infuse onto micro-channeled or freshly lasered skin within 15 min of reconstitution.