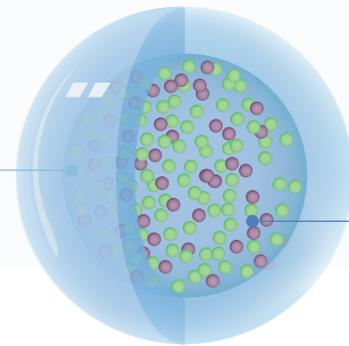


# SalSphere® Natural Anti-Aging (SS NAA)

Natural technology to reduce signs of aging.



Shell  
Core Procyanidin B2  
Resveratrol

Figure 1: The structure of SS NAA in which the active ingredients are encapsulated in the core.



Delivery system of natural polyphenol complex with high antioxidant, anti-aging, and anti-inflammatory activity. Polyphenols work on multiple biochemical pathways, such as DNA protection, protein synthesis, membrane integrity, etc. to reduce overall signs of aging, inflammation, wrinkle treatment, brightening, moisturizing, and overall skin rejuvenation.

## FUNCTIONAL INGREDIENTS

**RESVERATROL** is a potent polyphenol and powerful antioxidant derived from various botanicals, including the skin of red grapes. Resveratrol has been shown to reduce signs of aging and brighten and even out skin tone.<sup>1</sup> Resveratrol also impedes aging by inhibiting the production of COX-2, an enzyme responsible for signs of inflammation.<sup>2</sup>

**PROCYANIDIN B2** is a powerful polyphenol and antioxidant extracted from apples, which promotes cell growth and rejuvenation. It inhibits the formation of advanced glycation end-products (AGE) that cause wrinkles and dull skin tones.<sup>3</sup>

Both extracts are not stable in water-based formulations and must be encapsulated to allow commercial shelf life and efficacy. Encapsulation keeps the actives stable in products, including lotion (Figure 2).



SS NAA raw



1 Lotion



2 Wash

## UNIQUE FEATURES

- ENCAPSULATION INCREASES STABILITY AND BIOAVAILABILITY**  
Enables the suspension of resveratrol in water without alcohol; allows use of effective levels of polyphenols (0.03 g/L), stabilizing the polyphenols and preventing it from discoloring the finished product.
- TIME RELEASE**  
The microspheres enhance adhesion to the skin, extending the retention and contact time for longer release.
- EFFICIENT TREATMENT**  
The technology allows the polyphenols to be delivered deep into layers of the skin where they are needed the most at their optimal potency (Figure 3).

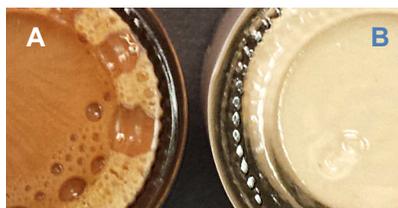
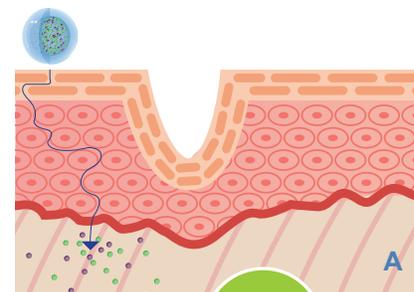


Figure 2: Free actives (A) oxidize and discolor the lotion, while encapsulated polyphenols (B) preserve the actives' efficacy while maintaining the product's color.



AFTER SS NAA

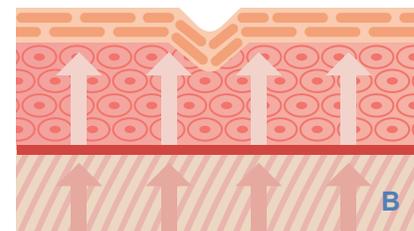


Figure 3: Illustration of SS NAA penetrates to the epidermis to boost collagen fibers synthesis (A), to better support the epidermis and decrease visual appearance of wrinkles on the skin (B).

# SalSphere® Natural Anti-Aging (SS NAA)

Natural technology to reduce signs of aging.

## ENHANCED DEPOSITION ON SKIN

In order for polyphenols to be effective in reducing the signs of aging, they need to be available on the skin for a longer period of time. This is crucial, especially in a rinse-off application when active ingredients will often just wash away.

SalSphere® technology has over five times greater deposition of polyphenols in a facial wash when compared to the free ingredients (Figure 3).

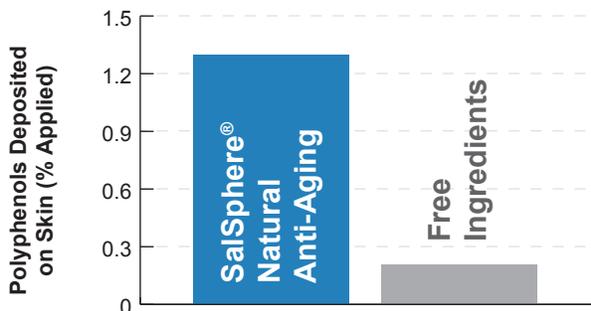


Figure 3: Amount of antioxidants deposited on skin from SalSphere® versus free. Polyphenols were detected using ethanol skin extractions followed by HPLC analysis from the forearms of volunteers.

## LONG-LASTING EFFICACY

The technology demonstrates a greater residence time on skin, enabling it to be more effective for a longer period of time (Figure 4). A lotion containing SalSphere® technology showed more than a three-fold higher level than the free application and an average of four-fold higher levels throughout the study.

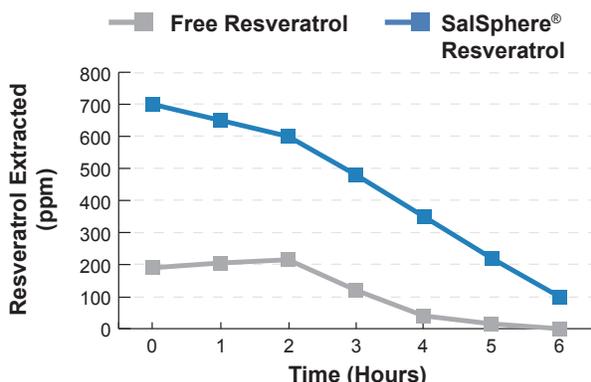


Figure 4: SalSphere® Resveratrol maintains a higher level on skin vs. free resveratrol over six hours. Resveratrol content was analyzed via HPLC after ethanol extractions from the skin.

## FORMULATION

### Anti-Aging Lotion

Ingredients	(W/W %)
SalSphere® Natural Anti-Aging	5.00
SalColors™	2.00
DI Water	78.50
Glycerin	2.00
Butylene Glycol	2.00
Polyvinylpyrrolidone	0.50
Squalane	3.00
Cetyl Alcohol	1.50
Stearyl Alcohol	1.50
Shea Butter	3.00
Preservative	1.00

## TECHNICAL DATA

<b>Appearance @ 20°C</b>	Opaque liquid
<b>Applications</b>	Creams, lotions, concealers, cleansers, and more
<b>Color</b>	Off-white
<b>Odor</b>	Characteristic
<b>pH (1% Solution)</b>	5.0 ± 1.0
<b>Shelf Life (months)</b>	18
<b>Usage Level (wt%)</b>	5-10
<b>Storage (°C)</b>	Closed container at 12-32°

## References

- Baxter RA. Anti-Aging Properties of Resveratrol: Review and report of a potent new antioxidant skin care formulation. Journal of Cosmetic Dermatology 2008 March, 7(1): 2-7.
- Svajger U., Jeras M. Anti-inflammatory effects of resveratrol and its potential use in therapy of immunemediated diseases. Int. Rev Immunol, 2012 Jun 31(3): 202-222.
- Peng X., Ma J., Chao J., Sun Z., Chang RC., Tse I., Li ET., Chen F., Wang M. (2010). Beneficial effects of cinnamoyl roanocyanidins on the formation of specific advanced glycation end products and methylglyoxal-induced impairment on glucose consumption. Journal of Agricultural and Food Chemistry 58 (11): 6692-6696.