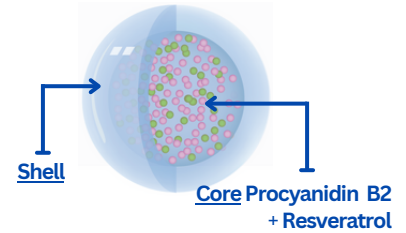


# SalSphere® Natural Anti-Aging

*Empowered polyphenols to reduce signs of aging*



## Why do you need this technology?

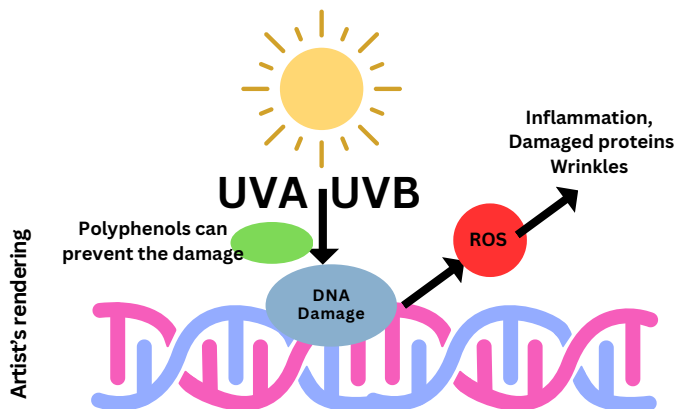
SalSphere® Natural Anti-Aging is an advanced and natural solution for fighting aging and maintaining youthful, rejuvenated-looking skin. Encapsulated in a unique delivery system of powerful natural polyphenol complex with high antioxidant, anti-aging, and anti-inflammatory activity.

## Unique natural delivery technology

SalSphere Natural Anti-Aging technology is used to stabilize polyphenols from premature degradation and oxidation and to enhance their bio-availability to protect skin from sun radiation, inflammation, wrinkles formation, and other signs of aging.



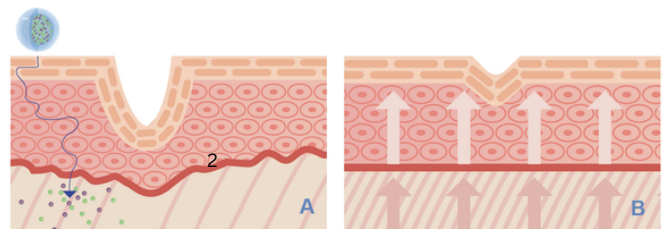
Polyphenols work on multiple biochemical pathways, such as DNA protection and protein synthesis, and protect the body from free radicals, which can, in turn, lead to signs of skin aging. Polyphenols prevent oxidative stress that can lead to inflammation, wrinkles, and dry skin. (Figure 1, 2).



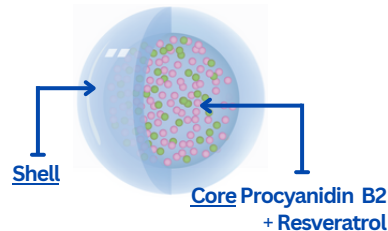
**Figure 1:** Diagram showing the mechanism by which polyphenols protect from sun radiation and inflammation and formation of signs of skin aging.

**RESVERATROL** is a potent polyphenol derived from various botanicals, including the skin of red grapes. Resveratrol has been shown to reduce signs of aging and even out skin tone. Resveratrol also impedes aging by inhibiting the production of COX-2, an enzyme responsible for signs of inflammation. It's water soluble and thus requires a delivery system to be effective.

**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 that cause wrinkles and dull skin tones. Procyanidin B2 is water-soluble and needs a delivery system to enhance its adhesion and bioavailability.



**Figure 2:** Illustration of SalSphere® Natural Anti-Aging penetrating to the epidermis to boost collagen fibers synthesis (A), to better support the epidermis, and decrease the visual appearance of wrinkles on the skin (B).

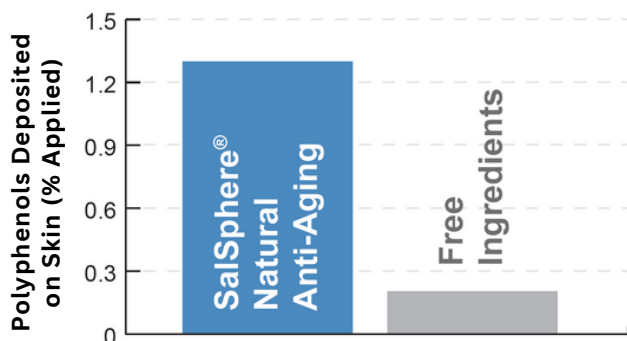


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*Empowered polyphenols to reduce signs of aging.*

## Enhances Deposition on Skin

SalSphere® technology is a lipid delivery system that enhances the stability and deposition of functional ingredients. A study used SalSphere Natural Anti-Aging in a wash-off. Panelists (n=6) washed one arm with SalSphere Natural Anti-Aging and the other with the same dose of free polyphenols. One hour after the wash and rinse, the spots on the arm were extracted with alcohol to determine the level of Resveratrol (an indicator of the blend) with HPLC.



**Figure 3:** Amount of antioxidants deposited on the skin from SalSphere® versus free.

SalSphere technology enables to deposit of 4 times more polyphenols on the skin from a wash-off, making a product more effective.

## UNIQUE FEATURES

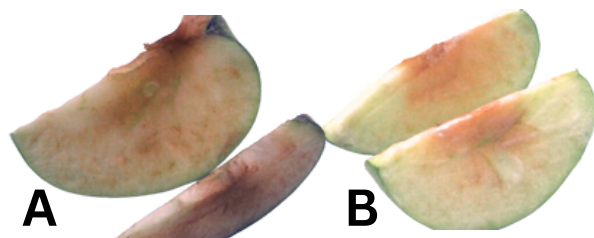
**1. A stable form of potent polyphenols:** Enables the suspension of resveratrol (insoluble in water) in water without alcohol; allows effective levels of polyphenols (0.03 g/L), stabilizing the polyphenols and preventing them from discoloring in the finished product.

**1. Time release:** Microspheres enhance adhesion to the skin, extending the retention and extending contact time for longer release.

**1. An effective form of antiaging polyphenols:** Easy to formulate wash-off, lotions, and serums.

## Retains Antioxidant Activity

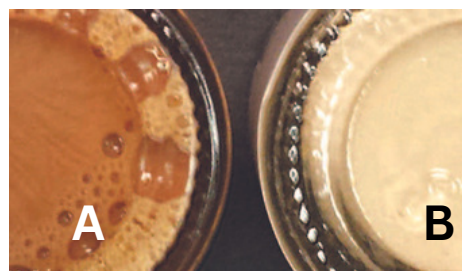
The basic experiment to determine antioxidant activity is to observe the discoloration of a slice of apple. Fig 5 shows the effect of deepening the apple slice in a solution of 1% SalSphere Natural Anti-Aging. The encapsulated form of these polyphenols shows high capacity to reduce oxidation.



**Figure 5:** Slices of apples were left out and exposed to air. A, control, slice dipped into water, B, slices dipped into solution containing 1% SalSphere Natural Anti-Aging. Observation after 1-hour shows significantly less brown oxidation on the B, treated with SalSphere Natural Anti-Aging.

## Stabilises Polyphenols in emulsion

The stability of SalSphere Natural Anti-Aging is tested in standard accelerated conditions. (42°C for 3 months). The free polyphenols at 5% discolored within a week, while the encapsulated form showed a stable color.



**Figure 6:** A, a suspension with free polyphenols (5%), and B, containing SalSphere® Natural Anti-Aging with the equivalent dose. Encapsulation is used successfully prevent oxidation and color change, protecting the efficacy of the polyphenols.

### Regulatory compliance:

