



HYDROXYSOMES[®] RESVERATROL

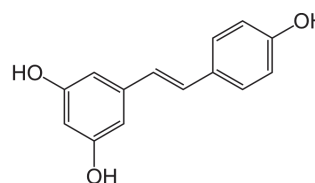
Next Generation Bioactives



LABORATORY SKIN CARE[®], INC. (LSC) has developed a novel method for co-engineering resveratrol together with its patented Hydroxysomes[®] Dermal Delivery Platform.

Resveratrol is found in diverse plant species, most notably in the skin of grapes and other berries. Found in red wine as source of the “French paradox”, this polyphenol shows significant biological activity and a number of benefits!¹

- Potent antioxidant, capable of both free radical scavenging and inhibition of oxidative enzyme activity
- Activates the longevity protein SIRT1²
- Protects skin against damages caused by UVA radiation³



The International Nomenclature of Cosmetic Ingredients (INCI) recognizes resveratrol as an effective skin conditioner and antioxidant. Hydroxysomes[®] Resveratrol is stable in final formulations. This powerful antioxidant has strong anti-inflammatory effect in the skin.⁴ In dermatological studies resveratrol has been shown to effectively help firm and lift the skin, and reduce age spots.⁵ It provides antioxidant protection to the skin, allowing it to detoxify and look healthy.

As skin ages or is damaged by many factors such as UV radiation, oxidation, physical damage or other signs of aging, a powerful antioxidant such as Hydroxysomes[®] Resveratrol provides continuous long lasting protection with its sustained release dermal delivery.

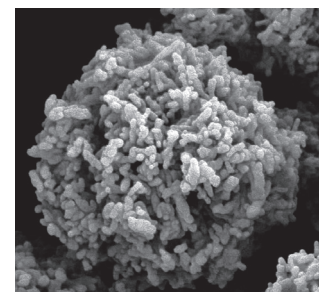
KEY ADVANTAGES OF HYDROXYSOMES[®] RESVERATROL

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|---------------------|----------------------------------|-----------------------------|
| • HIGHLY STABLE | • RESVERATROL & CALCIUM DELIVERY | • INCREASED BIOAVAILABILITY |
| • SUSTAINED RELEASE | • SKIN DETOXIFICATION | • ANTI-INFLAMMATORY |

ADDITIONAL BENEFITS OF HYDROXYSOMES[®] RESVERATROL

Hydroxysomes[®] Resveratrol also delivers calcium to the skin which enhances the effect of resveratrol. Delivering resveratrol and calcium simultaneously provides integrated anti-aging properties for younger looking skin.

ANTI-AGING EFFECTS OF CALCIUM: Calcium restores the skin’s normal balance by repairing the barrier function and maintaining the barrier integrity of stratum corneum (SC). A healthy skin barrier improves firmness, cellular cohesion, and hydration, allowing skin’s youthful appearance. Calcium plays a significant role in skin differentiation, which reduces the appearance of fine lines and wrinkles.

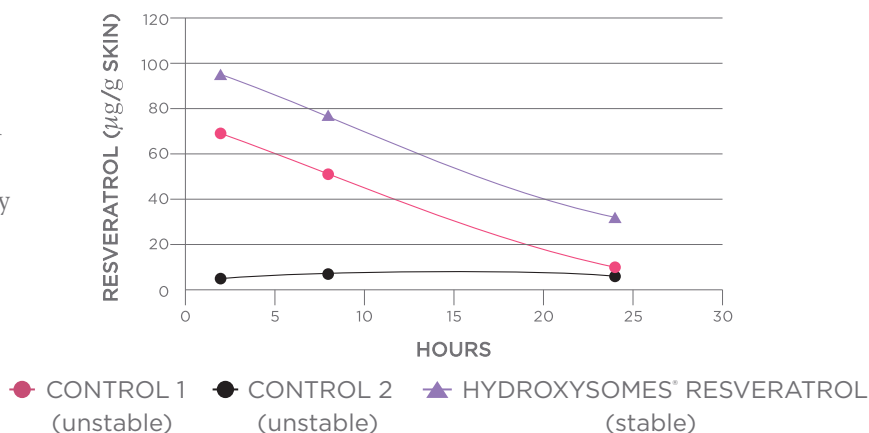


Hydroxysomes[®] Particle SEM 18,000x

HYDROXYSOMES® RESVERATROL DERMAL DELIVERY

Hydroxysomes® Resveratrol delivers stable resveratrol into the stratum corneum (SC) without any disruption to the integrity of the skin, and at a much higher level when compared to the two leading commercial resveratrol products (control 1 and 2). Notwithstanding the instability issue of resveratrol in final formulation, more resveratrol penetrates the epidermis when delivered with Hydroxysomes® than the controls. Studies show that the amount of resveratrol released from Hydroxysomes® Resveratrol in the skin has a much higher concentration as compared to controls when equal amounts of active in each final products were applied to the forearm of human subjects for 2, 8 and 24 hours. Results are shown in (Fig. 1). The comparison was conducted with flow-through Franz diffusion cells using human skin.

Fig. 1
Tissue: Human forearm skin
Vehicle: Topical Formulation
Sampling: Tape stripping
Analysis: UV/Vis spectroscopy



FORMULATION STABILITY:

Several formulations with Hydroxysomes® Resveratrol were stable at room temperature for 24 months, and at 40° C for three months, and at 50° C for one month. No change in bioactivity, pH, color, appearance, or viscosity was observed. Resveratrol active assay confirmed % activity as per specifications on C of A.

PRODUCT SPECIFICATIONS

INCI NAME:	RESVERATROL, HYDROXYAPATITE
ACTIVE LOAD:	45 ± 5.0% RESVERATROL
APPEARANCE	POWDER
COLOR:	OFF WHITE
ODOR:	ODORLESS
AVERAGE PARTICLE SIZE:	< 10 µm
STORAGE CONDITIONS:	ROOM TEMPERATURE
SHELF LIFE:	24 MONTHS
SOLUBILITY / COMPATIBILITY:	FREELY DISPERSIBLE IN ALL TYPES OF WATER AND OIL-BASED COSMETIC FORMULATIONS
RECOMMENDED USAGE:	1.0 - 2.0% HYDROXYSOMES RESVERATROL (0.45 - 0.9% RESVERATROL)
FORMULATION GUIDELINES:	ADD AT BELOW 40°C AT pH ≥ 5.5
PACKAGE SIZE:	1 Kg
CATALOG NUMBER:	200120



References

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2. Borra & Denu (2005). Mechanism of human SIRT1 activation by resveratrol. J Biol Chem. 280(17):17187-95.
3. Nichols & Katiyar (2010). Skin photoprotection by natural polyphenols: anti-inflammatory, antioxidant and DNA repair mechanisms. Arch Dermatol Res. 302(2):71-83.
4. Švajger & Jeras (2012). Anti-inflammatory effects of resveratrol and its potential use in therapy of immune-mediated diseases. Int RevImmunol. 31(3):202-22.
5. Baxter (2008). Anti-aging properties of resveratrol: review and report of a potent new antioxidant skin care formulation. J Cosmet Dermatol. 7(1):2-7.

US Patent 9192673

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