BARNET

OxiBlock-SF™

- Upcycled Superfood Complex
- Combats Oxi-Inflamm-Aging
- Boosts Skin Radiance
- Reduces Appearance of Wrinkles
- Inclusive Testing

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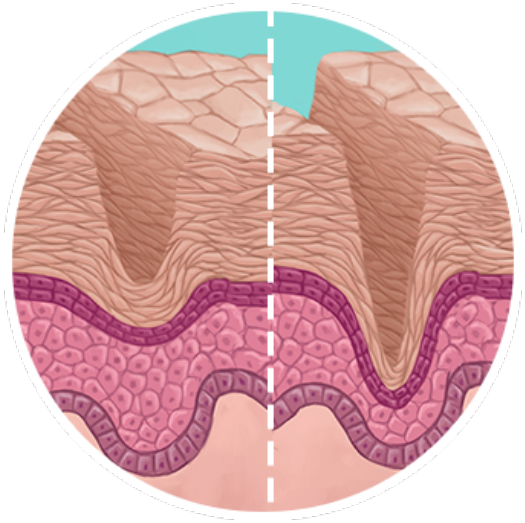
CONCEPT

Best Out of Super Green Sprouts

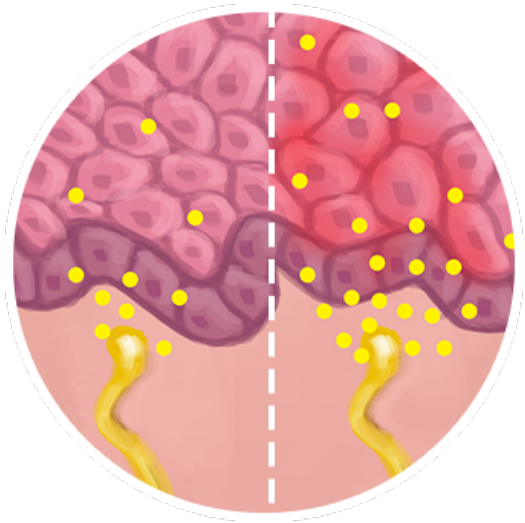
- Packed with vitamins, minerals, proteins, antioxidants and more, Super Greens provide a complex range of nutrients that are beneficial to the skin.
- The source of nutrients comes from the sprouts of Super Greens that is created from the germination process of the plant seed. When compared to the mature plant, the sprout is more nutrient dense.
- To preserve the nutritional components of the sprout, the sprout is air-dried at a low temperature then milled into a fine powder.
- OxiBlock-SF™ was designed using the nutritious sprouts of Kale in combination with antioxidant compounds from olives to create a powerful, antioxidant rich super green complex. This complex was created to combat the negative effects of oxidation on aging.

EFFECTS OF OXIDATION

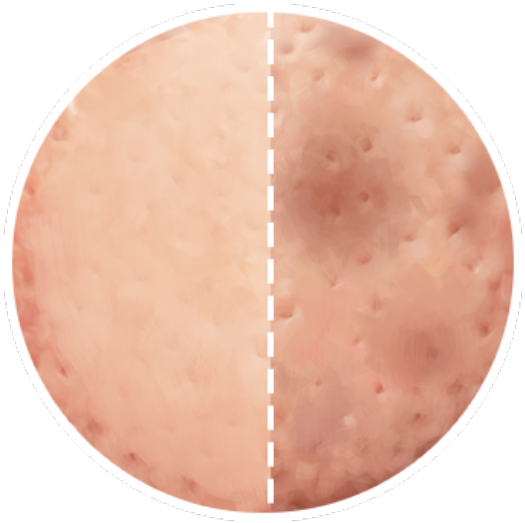
Oxi-Inflamm-Aging



Fine Lines and Wrinkles
Related Genes: VCAN, MMP2, MMP9, MMP10



Inflammation and Redness
Related Genes: IL-8 and TNF-α



Hyperpigmentation
Related Gene: EDN1 (or ET-1)

Impact of Oxidation on the Skin

- A byproduct of the normal biological processes, free radicals are highly reactive and unstable molecules. Stabilized by antioxidants, free radicals are necessary for normal biological processes.
- When destabilized, free radicals disrupt the body's natural function causing Oxidative Stress.
- In the skin, Oxidative Stress results in hyperpigmentation and Oxi-Inflamm-Aging (inflammation and fine lines and wrinkles).[1]

Source: (1) Martínez de Toda, Irene, et al. "The Role of Immune Cells in Oxi-Inflamm-Aging." Cells, vol. 10, no. 11, 2021, p. 2974., https://doi.org/10.3390/cells10112974.

IN VIVO: 1.00% IMPROVES SKIN RADIANCE

Before Treatment

After 4 Weeks with 1.00% OxiBlock-SF™

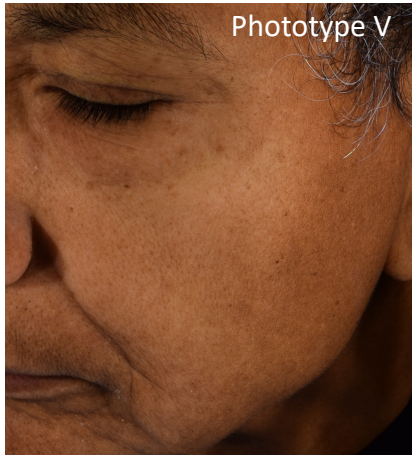
Skin Radiance

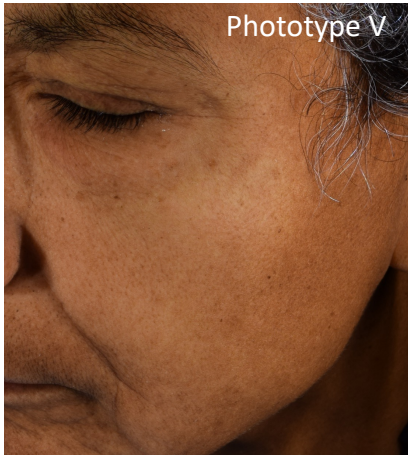
- An in vivo study was conducted on 25 volunteers aged 18-70 of differing ethnicities with visible fine lines and wrinkles. A treatment with 1.00% OxiBlock-SF™ was applied to the face twice daily for 4 weeks.
- Results were analyzed at 0 and 4 weeks.
- Results show OxiBlock-SF™ improves skin radiance and reduces the appearance of fine lines and wrinkles.

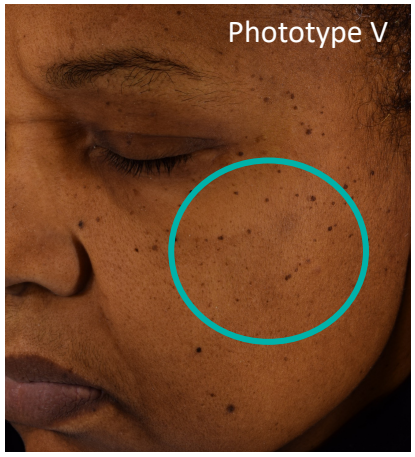
IN VIVO: 1.00% IMPROVES SKIN RADIANCE

Before Treatment

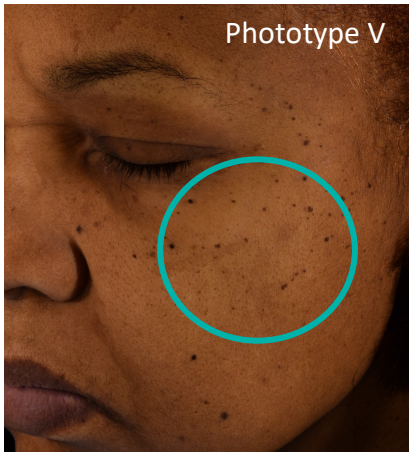
After 4 Weeks with
1.00% OxiBlock-SF™







Before Treatment



After 4 Weeks with
1.00% OxiBlock-SF™

Diverse Panel Testing

- An in vivo study was conducted on 25 volunteers aged 18-70 of differing ethnicities with visible fine lines and wrinkles. A treatment with 1.00% OxiBlock-SF™ was applied to the face twice daily for 8 weeks.
- Results were analyzed at 0 and 4 weeks.
- Results show OxiBlock-SF™ improves skin radiance.

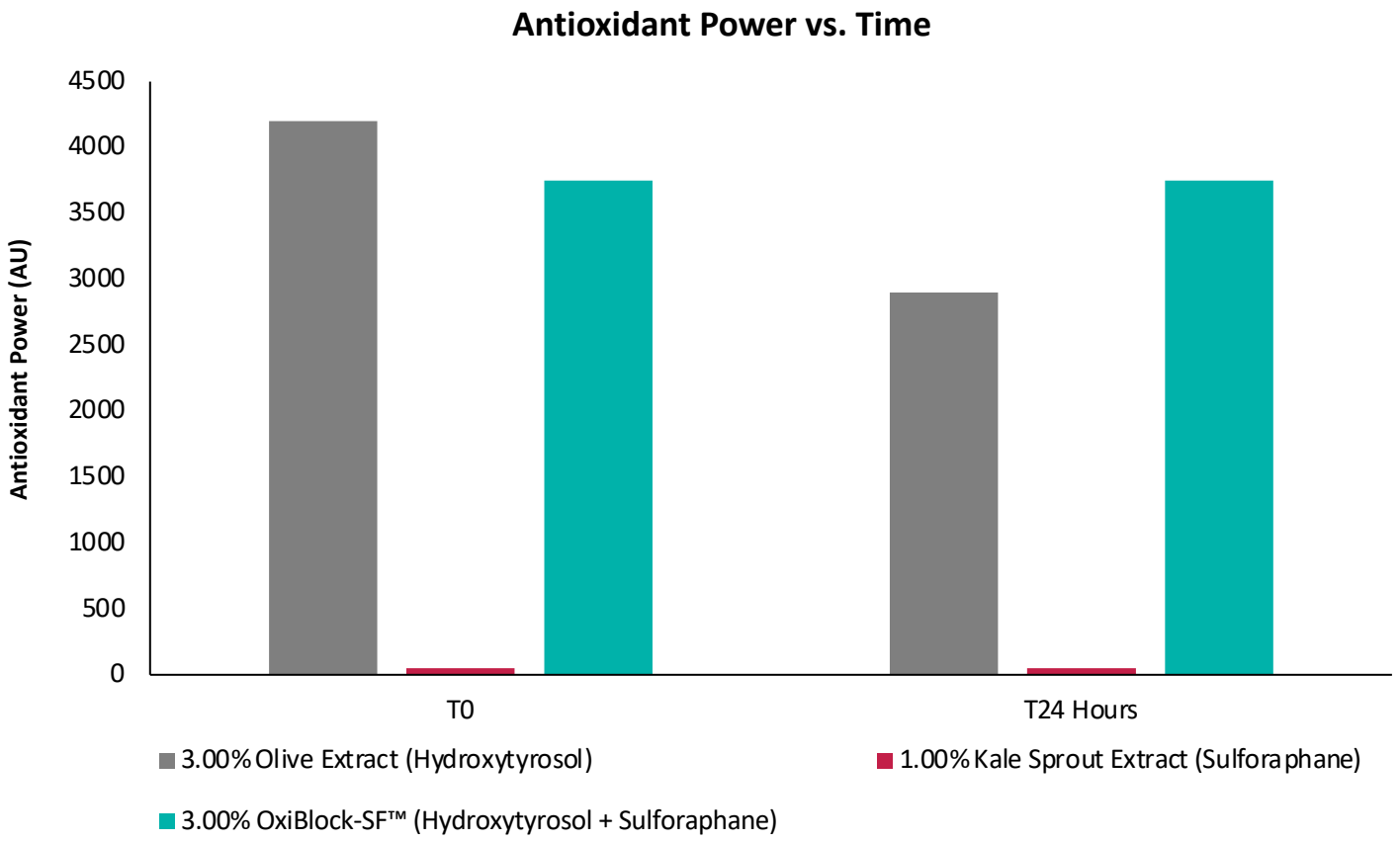
FIELD TO FACE

OxiBlock-SF™

- OxiBlock-SF™ is an antioxidant rich complex comprised of upcycled olives harvested from the South of Spain and ethically sourced kale sprouts.
- Grown hydroponically with 94% less water and no waste, the kale sprouts were obtained by a proprietary method to preserve the optimal benefits.
- OxiBlock-SF™ contains key nutrients such as vitamins (A, B3, C, etc.), minerals (Calcium, Zinc, etc.), Sulphoraphane, β-carotene and Hydroxytyrosol.
- Hydroxytyrosol, found in the leaves and fruit of olives and as a byproduct of olive oil production, has a stronger antioxidant power than certain vitamins and synthetic antioxidants such as BHT.
- Sulphoraphane, found at a high level in kale sprouts, is an antioxidant compound that helps stabilize the antioxidant power of Hydroxytyrosol.

INCI: Water (and) Propanediol (and) Glycerin (and) Olea Europaea (Olive) Fruit Extract (and) Xanthan Gum (and) Brassica Oleracea Acephala Leaf Extract

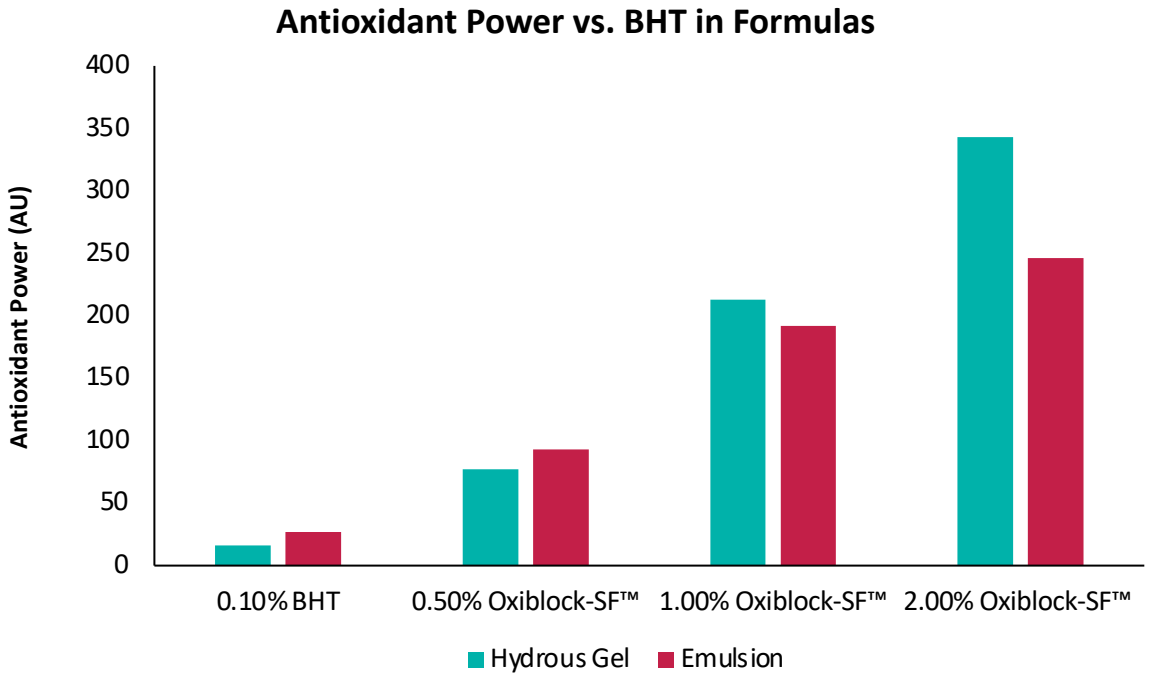
SYNERGISM



Synergism of OxiBlock-SF™

- A test was performed to show the antioxidant power of 3.00% Olive Extract, 1.00% Sulforaphane (Kale Sprout Extract), and 3.00% OxiBlock-SF™.
- Results were analyzed using an Electron Spin Resonance (ESR) spectroscopy.
- Results show that Kale extract has no antioxidant product while the antioxidant power of Olive Extract reduces after 24 hours. However, in OxiBlock-SF™, the synergy between the Olive and Kale results in a stabilized antioxidant power.

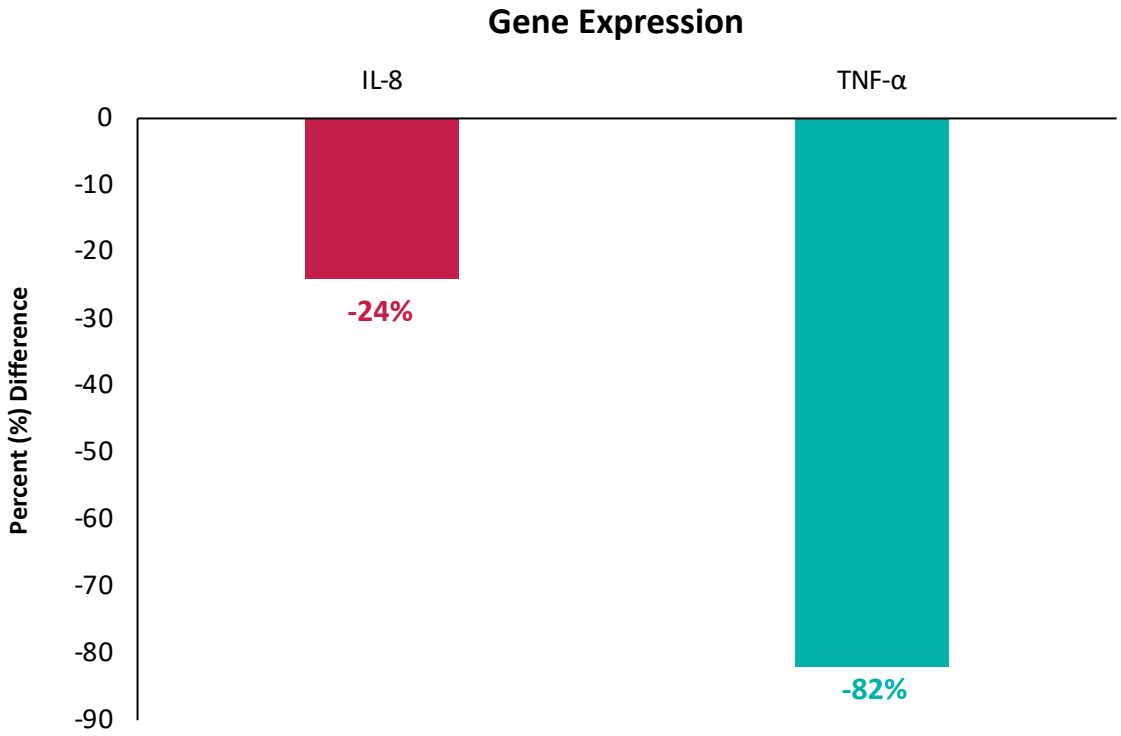
ANTIOXIDANT POWER



OxiBlock-SF™ Outperforms BHT

- Butylated Hydroxytoluene (BHT) is a synthetic material that acts as an antioxidant in formulation. To test the antioxidant powers of OxiBlock-SF™ in formulas, BHT was used as reference.
- In a test, a hydrous gel and emulsion were created using 0.10% BHT or 0.50%, 1.00%, or 2.00% OxiBlock-SF™. Test products were solubilized at a concentration of 100mg/mL in Ethanol for solutions and 50 mg/mL in Ethanol for powder.
- Results were analyzed using an Electron Spin Resonance (ESR) spectroscopy to measure the antioxidant capacity and reactivity. The test radical DPPH was used as a detector molecule.
- The signal intensity decay of each concentration of the test samples was recorded at different time intervals during the reaction until saturation was reached and all antioxidant active molecules reacted with the test radical.
- Results show that OxiBlock-SF™ has a higher antioxidant power than BHT in finished formulas.

IN VITRO: 1.00% REDUCES CYTOKINES

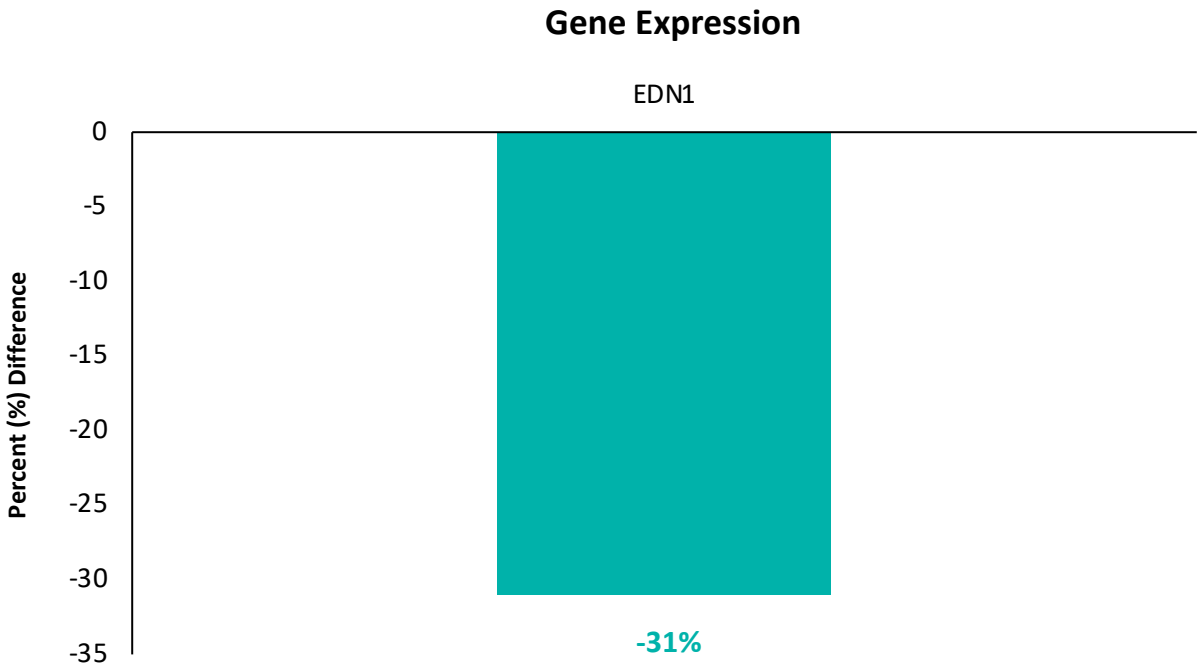


Reduces Anti-Inflammatory Genes

- Interleukin-8 (IL-8) and Tumor Necrosis Factor Alpha (TNF-α) are cytokines that play a role in the inflammation and immune response induced by Oxidative Stress.[2]
- An in vitro study was conducted on a skin culture model containing human primary keratinocytes and melanocytes treated with 1.00% OxiBlock-SF™ in Saline. After 48 hours, the skin model was analyzed using a qPCR-based gene expression panel.
- Results show that OxiBlock-SF™ may reduce the inflammatory response by decreasing IL8 (by 24%) and TNF-α (by 82%).

Source: (2) Reuter, Simone, et al. "Oxidative Stress, Inflammation, and Cancer: How Are They Linked?" Free Radical Biology and Medicine, vol. 49, no. 11, 2010, pp. 1603–1616., https://doi.org/10.1016/j.freeradbiomed.2010.09.006.

IN VITRO: 1.00% REDUCES ENDOTHELIN GENE

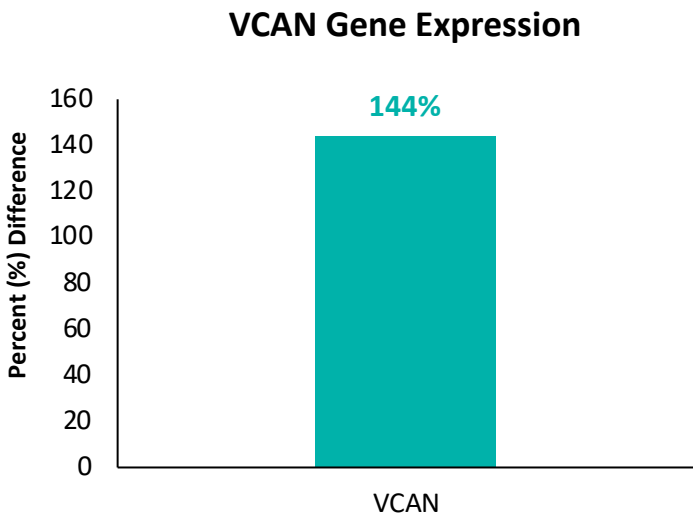


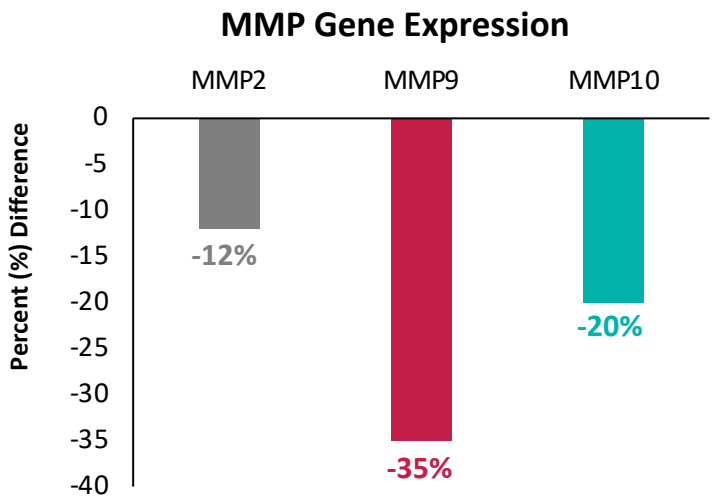
Reduces Pigmentation Gene

- Melanogenesis is the process of producing pigmentation. When melanogenesis is increased, it can lead to hyperpigmentation.
- OxiBlock-SF™ works to reduce the appearance of hyperpigmentation by decreasing EDN1 (Endothelin-1 gene). Endothelin-1 is responsible for increasing melanogenesis in the skin.[3]
- An in vitro study was conducted on a skin culture model containing human primary keratinocytes and melanocytes treated with 1.00% OxiBlock-SF™ in Saline. After 48 hours, the skin model was analyzed using a qPCR-based gene expression panel.
- Results show that OxiBlock-SF™ decreases EDN1 by 31%. Results indicate that OxiBlock-SF™ is a candidate to reduce hyperpigmentation.

Sources: (3) Regazzetti, Claire, et al. "Endothelial Cells Promote Pigmentation through Endothelin Receptor B Activation." Journal of Investigative Dermatology, vol. 135, no. 12, 2015, pp. 3096–3104., https://doi.org/10.1038/jid.2015.332.

IN VITRO: 1.00% IMPROVES ANTI-AGING GENES





Impacts Anti-Aging Gene

- The Extracellular Matrix (ECM) is an intricate gel-like network made of proteins (Collagen, Elastin, etc.), water and various other molecules that provides structural support between cells.
- Responsible for maintaining skin elasticity and firmness, the ECM is maintained and stabilized by genes such as Versican (VCAN). Versican is a large proteoglycan of chondroitin sulfate.[4]
- Matrix Metalloproteinases (MMP) are responsible for degrading of the non-matrix and matrix proteins (collagen and elastin) of the ECM.
- An in vitro study was conducted on a skin culture model containing human primary keratinocytes and melanocytes treated with 1.00% OxiBlock-SF™ in Saline. After 48 hours, the skin model was analyzed using a qPCR-based gene expression panel.
- Results show that OxiBlock-SF™ increases VCAN by 144% and decreases MMP2 by 12% , MMP9 by 35%, and MMP10 by 20%.
- Results indicate that OxiBlock-SF™ can possibly improve skin firmness.

Sources: (4) Ruiz Martínez, M.A., et al. "Role of Proteoglycans on Skin Ageing: A Review." International Journal of Cosmetic Science, vol. 42, no. 6, 2020, pp. 529–535., https://doi.org/10.1111/ics.12660.

IN VIVO: 1.00% IMPROVES FIRMNESS

Before Treatment

After 4 Weeks with 1.00% OxiBlock-SF™

Before Treatment

After 4 Weeks with 1.00% OxiBlock-SF™

Diverse Panel Testing

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- Results were analyzed at 0 and 4 weeks.
- Results show OxiBlock-SF™ reduces the appearance of fine lines and wrinkles and hyperpigmentation.

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OxiBlock-SF™

INCI Name: Water (and) Propanediol (and) Glycerin (and) Olea Europaea (Olive) Fruit Extract (and) Xanthan Gum (and) Brassica Oleracea Acephala Leaf Extract

Preservative: None

Suggested Use Level: 0.50 – 1.00%

Formulation Guidelines: OxiBlock-SF™ is an amber yellow, transparent viscous liquid with a characteristic odor. OxiBlock-SF™ is water soluble and should be post-added to the formula during the cooling stage at a temperature below 35°C when water is the external phase. The recommended pH is below 5.5. Due to the naturality of OxiBlock-SF™, it may impart color to the formula.

Global Compliance and Product Features:

COUNTRY	COMPLIANCE
AUSTRALIA	Listed AICIS; Exempt
CANADA	Listed DSL; Exempt
CHINA	Listed IECIC
EU	<1 MT Exempt

For additional information please contact technical@barnetproducts.com.