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AC PomeaShield

COMPLEX ACTIVES



VEGAN



COSMOS



IN VITRO



IN VIVO



CHINA



ISO 16128



PRODUCT
PASSPORT



THE FEATURES.

Utilizing a sustainable Cradle to Cradle approach, AC PomeaShield utilizes the whole pomegranate to reduce waste and capitalizes on rich pomegranate polyphenols to create an efficacious ingredient with an abundance of skincare benefits. AC PomeaShield will help in the process of cellular detoxification to maintain skin homeostasis. It will also help protect the skin from oxidative stress that can cause signs of premature aging. This natural active will promote smooth and firm skin by boosting elastin production. Incorporate AC PomeaShield into your next skincare formula to reduce the signs of skin aging by targeting senescent cells. AC PomeaShield is an antioxidant and anti-aging powerhouse ingredient.

Water & Punica Granatum Fruit Extract & Lactobacillus Ferment

Actions

Antioxidant
Anti-Aging
Reduces Senescence
Elastin Synthesis

TECHNICAL DATA SHEET.

THE REGULATION.

INCI. Water & Punica Granatum Fruit Extract & Lactobacillus Ferment
CAS. 7732-18-5 & 84961-57-9 & 1686112-36-6 (or) 68333-16-4
EINECS. 231-791-2 & 284-646-0 & N/A (or) N/A
EUROPE. Compliant
USA. Compliant
CHINA. Compliant

THE SPECIFICATION.

Origin. Botanical
Natural Antimicrobial. Lactobacillus Ferment
Preservatives. None
Solvents Used. Water
Soluble/Miscible. Water Soluble
Appearance. Clear to Hazy Liquid, Yellow to Amber
Use Level. 1- 10 %



THE STORY.

Brands are taking notice of the fact that consumers are veering towards sustainability. Awareness of the need to act sustainably is growing among consumers of all ages, albeit at different rates. Brands and retailers who respond to consumer demand for sustainable products will be better placed to succeed. The beauty industry is one of the top offenders when it comes to environmental waste. Let's reframe the personal care industry's perspective on waste. Ethicality and sustainability are driving consumer choices as a result of the environmental crisis, notably for Gen Z and Millennials. Raw material suppliers must employ sustainable methods at every step of the supply chain to reduce negative environmental, social, and economic repercussions.

With a Cradle to Cradle approach, AC PomeaShield supports the sustainability movement, allowing brands to build a sense of trust and transparency with their customers. Cradle to Cradle is a philosophy that raw material waste is not thrown away but is repurposed to create new ingredient technologies. When Active Concepts sources from local farmers and suppliers, we utilize every part possible of the plant material. By this approach, the waste that is produced is minimized, all while producing incredible ingredients with scientific efficacy. Active Concepts is utilizing the whole pomegranate to reduce waste and capitalizing on rich pomegranate polyphenols to create an efficacious ingredient with an abundance of skincare benefits.

Since ancient times, pomegranates have been known for their medicinal and beauty benefits. In many cultures, it is touted as a symbol of prosperity and abundance. Today, pomegranate is not only a delicious, juicy fruit, but it is a known superfood with numerous health and skincare benefits due to its rich nutrient profile. When it comes to skincare, the power of this fruit lies in its antioxidant polyphenols.

THE SCIENCE.

Natural polyphenols, named for the multiple phenolic hydroxyl groups in their structures, continue to be of scientific interest due to their multifunctional biological properties. Pomegranates contain high levels of antioxidant polyphenols including punicalagin, ellagic acid, gallotannins, anthocyanins, and other flavonoids. Oxidative stress plays a very important role in skin aging. Overproduction of reactive oxygen species (ROS) can damage the membranes, lipids, proteins, RNA, and DNA of cells. As excellent antioxidants, the phenolic hydroxyl groups of polyphenols can decrease levels of free radicals by providing electrons and can also be used as free radical scavengers to inhibit or eliminate the formation of free radicals, thereby destroying the progress of free radical chain peroxidation.

On a cellular level, the aging of mitotic cells is defined as cellular senescence (or cell aging), which is also thought to contribute to aging. Cellular senescence represents a complex process of permanent cell cycle arrest, while the cell remain metabolically active. Senescent cells have been found to accumulate with age and may contribute to age-related skin changes and pathologies. By affecting molecular pathways of senescence, polyphenols are able to prevent or delay the senescence formation and, consequently, avoid or ameliorate aging and age-associated pathologies of the skin.

AC PomeaShield is an antioxidant and anti-aging powerhouse ingredient. By capitalizing on rich pomegranate polyphenols, this ingredient will help protect from oxidative stress that can cause signs of premature aging. Additionally, it will target senescent cells to the accumulation of aged skin cells and reduce cellular aging.

THE BENEFITS.

Skin

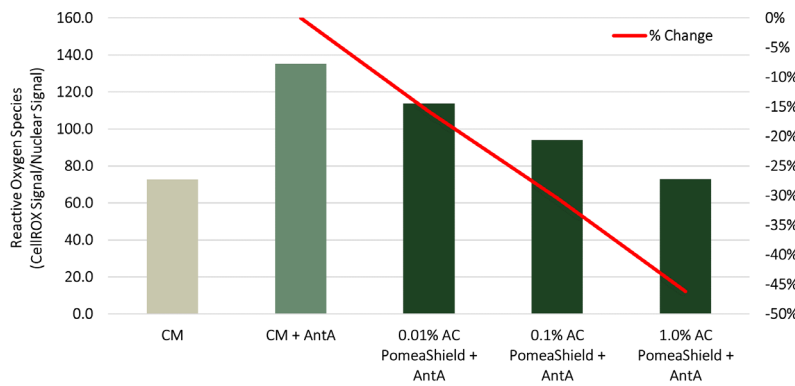
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|---|--|--|
| Oxidative Stress Scavenging | Reactive Oxygen Species Scavenging Assay | |
| Autophagy & Cellular Aging Reduction | Cellular Detoxification Assay | |
| Reduces Cellular Senescence | SA-β-gal Activity | |
| Elastin Synthesis | Elastin ELISA | |

| | | |
|-------------------------|---------------------------------|--|
| Moisturizing | Moisturization Assay | |
| Barrier Function | Transepidermal Water Loss Assay | |
| Sebum Control | Shine Reduction Assay | |

THE EFFICACY.

Reactive Oxygen Species Scavenging Assay.

ROS (Reactive Oxygen Species) Scavenging Assay was conducted to assess the *in vitro* effect of AC PomeaShield to scavenge unnecessary oxidative stress in dermal fibroblasts. Attenuation of excessive ROS preserves cellular homeostasis and blunts intrinsic and extrinsic age-related declines in skin cell function.



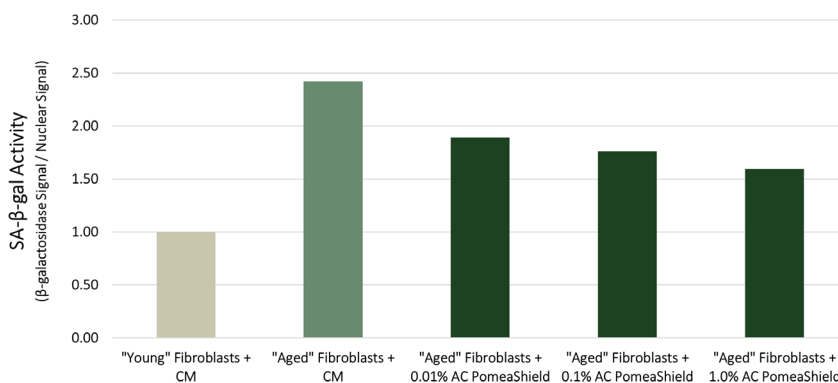
AC PomeaShield at 0.1% decreased ROS levels by 30%

Antioxidant.

Attenuation of excessive oxidative stress

SA-β-gal Assay.

Cellular senescence is a state of permanent cell cycle arrest that accompanies aging. A cellular aging model was developed to assess the *in vitro* effect of AC PomeaShield to reduce SA-β-gal activity in "aged" keratinocytes.



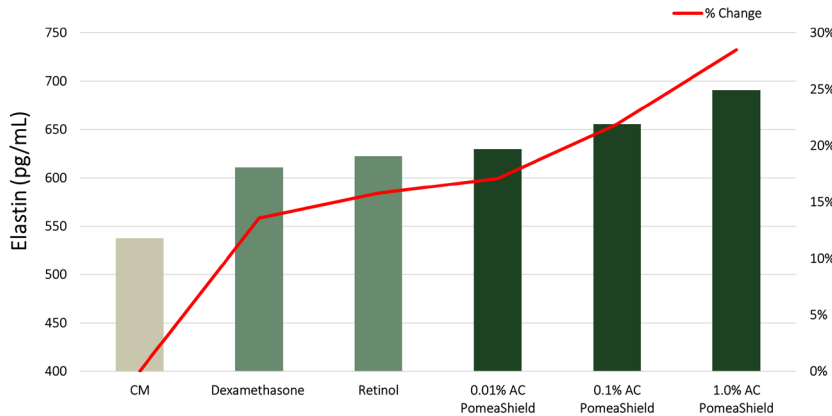
AC PomeaShield at 0.1% elicited a reduction in SA-β-gal activity by 27%

Anti-Aging.

Reduces cellular senescence

Elastin ELISA.

Elastic-like fibers, such as elastin, comprise part of the extracellular matrix and confer elasticity to organs and tissues including the heart, skin, lungs, ligaments, and blood vessels. Increasing production of elastin is believed to slow down degradation of the skin matrix and, possibly, stimulate its replenishment. An Elastin ELISA was conducted to assess the *in vitro* effect of AC PomeaShield on the intracellular synthesis of elastin from human dermal fibroblasts.



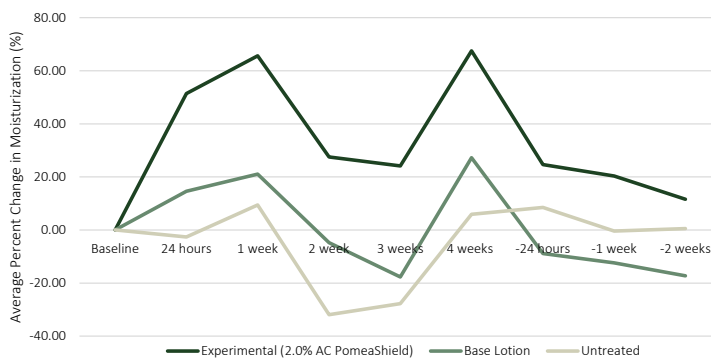
AC PomeaShield at 0.1% augmented intracellular elastin concentrations by 22%

Elastin Synthesis.

Decrease signs of aging & Reduce fine lines and wrinkles

Moisturization Assay.

An *in vivo* study was conducted over a period of 4 weeks to evaluate the moisturization benefits of AC PomeaShield. 20 M/F subjects between the ages of 23-45 participated in the study.



Increases skin moisturization (at 2% improves moisture levels by 67% after 4 weeks)

Moisturization.

Moisturizing & hydrating benefits

References

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- Sun, Mang, et al. "Effects of Natural Polyphenols on Skin and Hair Health: A Review." *Molecules* 27.22 (2022): 7832.

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