

10229.

ABS

# White Willow Bark Extract Powder

Anti-Inflammatory

Pro-Collagen

Frizz Reduction



VEGAN



SEPHORA  
CLEAN



CREDO  
CLEAN



GLOBALLY  
COMPLIANT



COSMOS  
COMPLIANT



ISO 16128



PRODUCT  
PASSPORT



## THE FEATURES.

**H**erbal extracts have a long history of use and are now widely valued in cosmetics as consumers seek natural, plant-based ingredients. White willow (*Salix alba*) bark extract, used for thousands of years, is now widely appreciated in personal care products for its potent anti-aging benefits. Containing natural salicylates, ABS White Willow Bark Extract Powder offers formulators a powerful skin and hair ingredient. This powder-based active is ideal for traditional and anhydrous formulations, in addition to hybrid and fresh-mix systems.

*INCI: Salix Alba (Willow) Bark Extract*

TECHNICAL DATA SHEET.

# ABS White Willow Bark Extract Powder

## THE STORY.

From ancient remedies to modern beauty routines, herbal extracts have stood the test of time. Today's consumers are increasingly choosing natural, sustainable ingredients over animal-derived alternatives, making botanicals like white willow popular for their gentle yet effective benefits.

White willow (*Salix alba*) is a small tree native to Europe, Asia, and North Africa.<sup>1</sup> Its bark extract has been used for thousands of years, with historical records dating back over 6,000 years to Mesopotamia. Even Hippocrates recognized the benefits of willow bark, recommending it to ease pain and inflammation in his patients.<sup>2</sup> Clinical studies show that herbal extracts from white willow bark are generally better tolerated than synthetic alternatives, contributing to its growing popularity as a natural option instead of aspirin.<sup>3</sup> In recent years, white willow bark extract has seen increased use in cosmetics for its broad spectrum of anti-aging effects.

Rich in natural salicylates, ABS White Willow Bark Extract Powder brings the power of nature to your personal care routine, offering a gentle and effective way to enhance skin and hair health.



## THE SCIENCE.

Upcycled white willow bark helps lower Active Concepts' carbon footprint while providing extracts rich in beneficial phenolic compounds used in cosmetic ingredients and formulations. These bioactive compounds of white willow bark extract have been proven to impart anti-inflammatory, collagen boosting, exfoliation, antioxidant, and hair care benefits.

Also referred to as salicin willow, white willow is cited as a key source of salicin and other salicylic derivatives.<sup>4</sup> Produced from willow bark, salicin acts as a metabolic precursor to salicylic acid in humans and is an anti-inflammatory compound closely related to aspirin, sharing a similar mechanism of action.<sup>5</sup> In addition to its anti-inflammatory prowess, willow bark extract has been shown to increase collagen synthesis and reduce wrinkles.<sup>6</sup>

As we age, the skin's natural exfoliation process slows, leading to an accumulation of dry, dull skin flakes. Willow bark extract offers exfoliating activity comparable to salicylic acid, without the associated irritation.<sup>7</sup> This botanical is recognized for supporting more effective stratum corneum turnover compared to synthetic salicylic acid. In addition, white willow also offers antioxidant protection, helping defend biological systems against the damaging effects of reactive oxygen species (ROS) and supporting pro-health benefits.<sup>3</sup>

Additionally, for hair care, willow bark extract has been implemented in shampoos and hair masks for a variety of scalp and hair concerns, including dandruff, itchy skin, and hair loss.<sup>6</sup>

The following efficacy highlights the ability of ABS White Willow Bark Extract Powder to offer powerful anti-aging skin and hair benefits to cosmetic and personal care formulations.

## THE TECHNICAL DETAILS.

**INCI.** Salix Alba (Willow) Bark Extract

**CAS.** 84082-82-6

**EINECS.** 282-029-0

**EUROPE.** Compliant up to 4.60% (Rinse-off Products)  
or 3.00% (Other Products)

**USA.** Compliant

**CHINA.** Compliant up to 4.60%

**Origin.** Botanical

**Natural Antimicrobial.** None

**Preservatives.** None

**Solvents Used.** None

**Appearance.** White to Off-White, Free Flowing Powder

## THE FORMULATION TIPS.

**pH Stability.** 4 - 7

**Temperature Stability.** Stable up to 80°C

**Use Level.** 1 - 10%

**Ionic State.** Cationic

**Alcohol Compatibility.** Compatible with 50% SDA-40

**Solubility.** Water Soluble

**Pro Tips.** It is recommended that this product is added to the aqueous phase

# ABS White Willow Bark Extract Powder

## THE BENEFITS OVERVIEW.

### Skin

- Anti-Inflammation** IL-6 ELISA
- Barrier Integrity** Intracellular Calcium Assay
- Boosts Collagen** High Resolution Ultrasound Skin Imaging Study
- Exfoliation** Cellular Renewal Study

- Antioxidant** Oxygen Radical Absorbance Capacity (ORAC) Assay
- Problem Skin** *P. acnes* & *S. aureus* Zone of Inhibition

### Hair

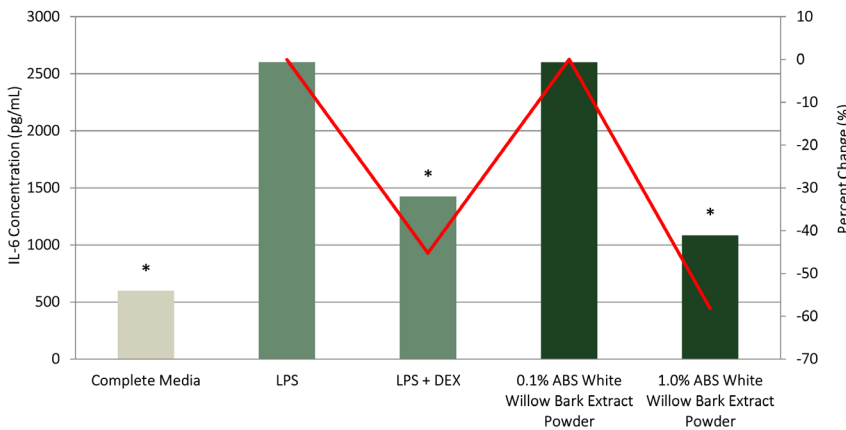
- Stylist Approved** Salon Half-Head Study

## THE EFFICACY.

### Anti-Inflammation

An interleukin-6 ELISA was conducted to assess the *in vitro* effect of ABS White Willow Bark Extract Powder to elicit changes in IL-6 levels in dermal fibroblasts. A decrease in IL-6 production indicates a reduced inflammatory environment which could diminish the signs of aging and soothe the skin. These data indicate ABS White Willow Bark Extract Powder exerts an anti-inflammatory effect, which may help to attenuate characteristics of cellular aging.

IL-6 ELISA

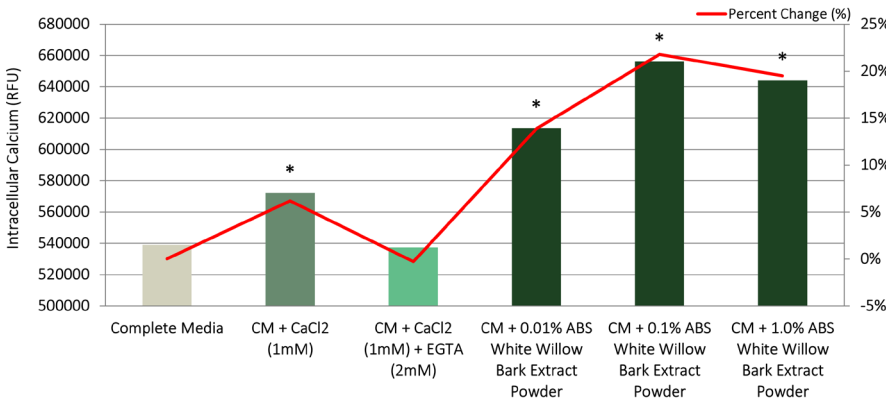


**Reduces IL-6 levels by -58% at 1.0%**

### Barrier Integrity

A Fluo-4 Direct™ calcium assay was performed to assess changes in intracellular calcium levels in ABS White Willow Bark Extract Powder-treated human epidermal keratinocytes *in vitro*. Intracellular calcium levels are an indicator of keratinocyte proliferation, differentiation, and migration, which contribute to the preservation of skin barrier integrity and homeostasis. These data indicate ABS White Willow Bark Extract Powder augments intracellular calcium levels, which may help to maintain overall skin health.

Intracellular Calcium



**Improves intracellular calcium levels by +22% at 0.1%**

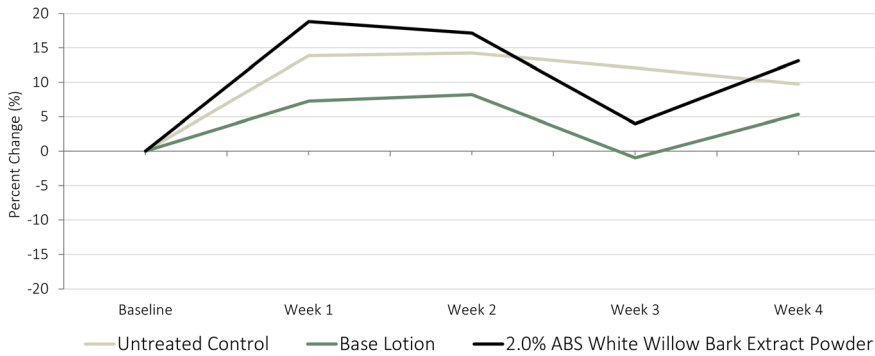
# ABS White Willow Bark Extract Powder

## THE EFFICACY CONTINUED.

### Boosts Collagen

A high resolution ultrasound skin imaging study was conducted to assess the ability of ABS White Willow Bark Extract Powder to improve Collagen Fiber Density. 10 volunteers between the ages of 23 and 45, who were known to be free of any skin pathologies with Fitzpatrick skin types I to IV, participated in this study. Three randomly assigned test sites were identified on the volar forearm of participants and baseline measurements were recorded. Following baseline measurements, participants applied 0.2 g of each test material on their volar forearms twice a day for four weeks. Measurements were recorded once a week for four weeks. Results indicate ABS White Willow Bark Extract Powder improves normal skin aging by augmenting collagen density, resulting in a healthier and more youthful skin appearance.

High Resolution Ultrasound Skin Imaging

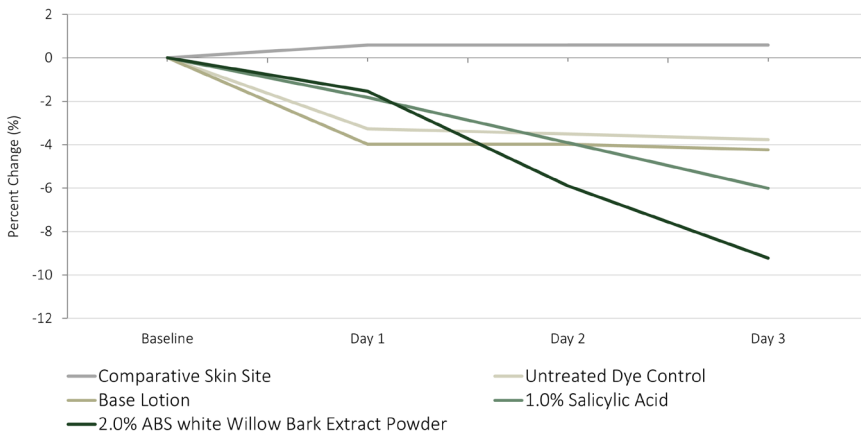


**Increases collagen density by +19%**

### Exfoliation

A cellular renewal study was conducted to evaluate the ability of ABS White Willow Bark Extract Powder to accelerate skin cell replacement by assessing changes in pigmentation. 10 volunteers between the ages of 20 and 45, who were known to be free of any skin pathologies with Fitzpatrick skin types I to III, participated in this study. Dermal Dye Max™ was applied to 4 out of 5 test sites and allowed to develop for 24 hours prior to baseline readings. Results indicate ABS White Willow Bark Extract Powder accelerates the processes of cellular renewal which can improve the skin's physical appearance as well as function as a protective barrier.

Cellular Renewal



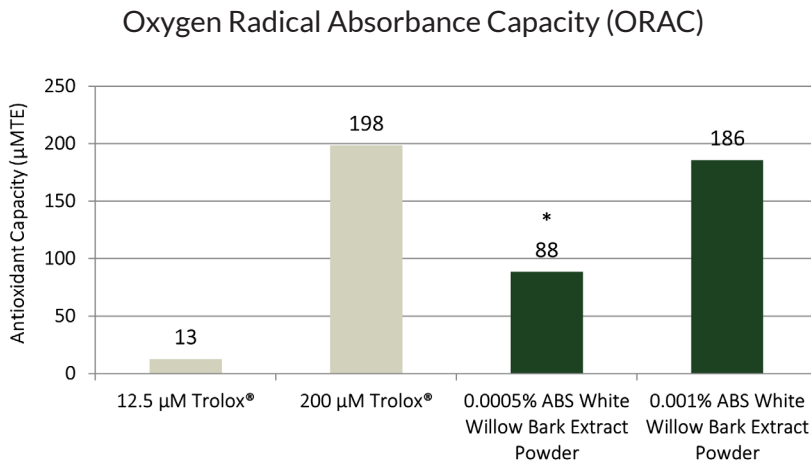
**Decreases pigmentation by -9.2%**

# ABS White Willow Bark Extract Powder

THE EFFICACY CONTINUED.

## Antioxidant

An oxygen radical absorbance capacity (ORAC) assay was conducted to assess the antioxidant capacity of ABS White Willow Bark Extract Powder. Solutions of ABS White Willow Bark Extract Powder and Trolox® (positive control) were prepared in 75 mM potassium phosphate buffer. Materials were prepared at two different concentrations/dilutions. Trolox® was used as a reference for antioxidant capacity and prepared at concentrations ranging from 12.5 µM to 200 µM in 75 mM potassium phosphate buffer. Results indicate ABS White Willow Bark Extract Powder is capable of providing antioxidant properties and aids in the anti-aging process through protection at the cellular level.



Enhances antioxidant capacity by +6.25% at 0.001%

## Problem Skin

A well-known benefit of traditional salicylic acid is its ability to treat acne breakouts. Therefore, a zone of inhibition against *P. acnes* and *S. aureus* was performed. Results between 12 and 25 mm or greater demonstrate the antimicrobial activity of the product. Results <12 mm are considered to have low antimicrobial activity. Based on the results, ABS White Willow Bark Extract Powder shows inhibition of *P. acnes* and *S. aureus*.

*P. acnes* & *S. aureus* Zone of Inhibition

Organism (ATCC #)	Minimum Inhibitory Concentration (%)
<i>S. aureus</i> #6538	1.0
<i>P.acnes</i> # 6919	>8.0

Inhibits growth of *P. acnes* and *S. aureus*

# ABS White Willow Bark Extract Powder

THE EFFICACY CONTINUED.

## Stylist Approved

A salon half-head study was conducted to evaluate the perceived hair benefits of ABS White Willow Bark Extract Powder in a shampoo and conditioner on wet and dry hair. These results indicate ABS White Willow Bark Extract Powder improves the perceived benefits with wet and dry hair when added to shampoo and conditioner at recommended use levels. Collectively, ABS White Willow Bark Extract Powder demonstrates visual and perceived hair characteristics which contribute to a healthier looking hair appearance.



Improves frizz by +17%



Increases hydration by +14%

References:

1. Piątczak, Ewelina, et al. "Identification and Accumulation of Phenolic Compounds in the Leaves and Bark of Salix alba (L.) and Their Biological Potential."
2. Sulaiman, Ghassan Mohammad, et al. "Phenolic content, antioxidant, antimicrobial and cytotoxic activities of ethanolic extract of Salix alba." Am. J. Biochem. Biotechnol 9.1 (2013): 41-46.
3. Zaiter, Ali, et al. "Antioxidant and antiacetylcholinesterase activities of different granulometric classes of Salix alba (L.) bark powders." Powder Technology 301 (2016): 649-656.
4. NEAGU, Miruna, et al. "Bioactive phenolic compounds from white willow (Salix alba) bark, leaves and branches." UPB Scientific Bulletin, Series B: Chemistry and Materials Science 83.3 (2021): 41-50.
5. Bodirli, Ruxanda, et al. "Anti-inflammatory constituents from different plant species." Environmental Engineering & Management Journal (EEMJ) 8.4 (2009).
6. Choukri, Hamiou Ayoub. "Composition substantiation and technology development of extemporaneous gel with Lemon balm and Willow bark extracts." (2025).
7. ABDALRAHMAN, MAAROOF RASUL, and SHNO ABDALQADIR SOFI. "The Bark Extraction of Salix Aegyptiaca L Antibacterial Activity." Journal of Contemporary Issues in Business and Government Vol 27.3 (2021).

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