



PRUNELLA

Regeneration with the
Elasticity Architect



Effective Formula
Against Skin
Sagging



ACTV
BIOTECH

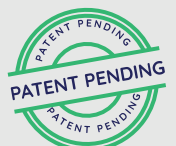
Regeneration with the Elasticity Architect

Effects

- Reduces the synthesis of elastase, reduces the appearance of wrinkles in the nasolabial and marionette area by increasing the synthesis of elastin and elastin-related proteins, and significantly prevents sagging.
- It has effective wound healing activity.
- It shows high antioxidant activity, moisturizes the skin and makes the skin look smooth.

Origin

Developed from *Prunella vulgaris* (Self-heal) stem cells using ProlCell® Technology.



What is ProlCell® Technology?

ProlCell® Technology enables to benefit the effects of plant stem cells and small RNAs in their vesicles.



Effect Mechanism

ProlCell® Prunella contains enriched stem cell components and stem cell specific exogenous small RNAs thanks to the elicitor application.

What is the effect of small RNA?

Small RNAs, including miRNA are non-coding RNA fragments, which regulate the post-transcriptional silencing of target genes. Plant small RNAs may exert similar functions in both human and plant. This provides exogenous plant small RNAs to play a key role on the physiological function of the human body, including the skin.

Activity Tests

In vitro Tests

Cell line: Human normal fibroblast cell,

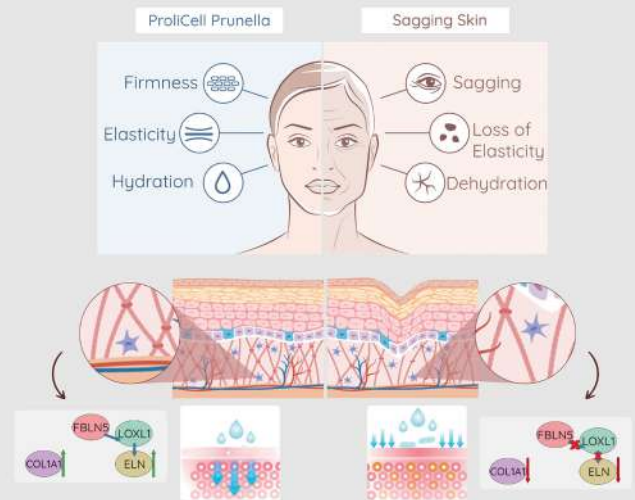
Test ingredient: 250 ve 500 µg/mL ProlCell Prunella extract

Parameter:

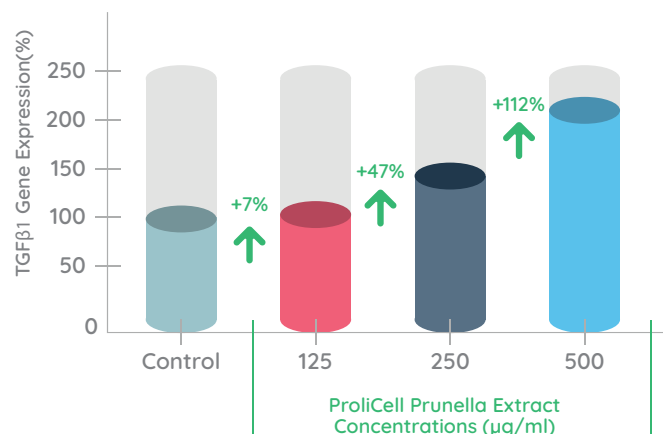
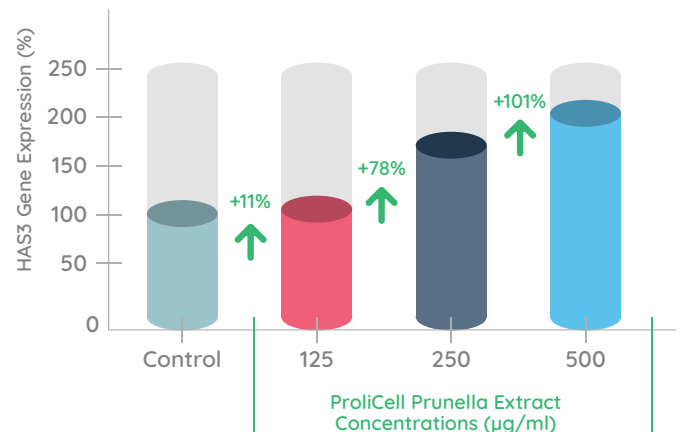
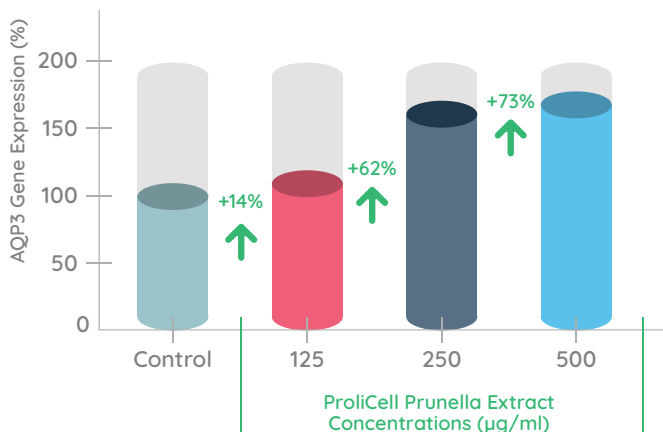
Analysis of expressions of hydration and proliferation-related genes by RT-qPCR,
Analysis of expression of elastin-related genes by RT-qPCR,

Determination of wound healing activity
For gene and protein expression analysis, fibroblast cells were incubated with ProlCell Prunella extract concentrations for 24 hours.

Mechanism of effect

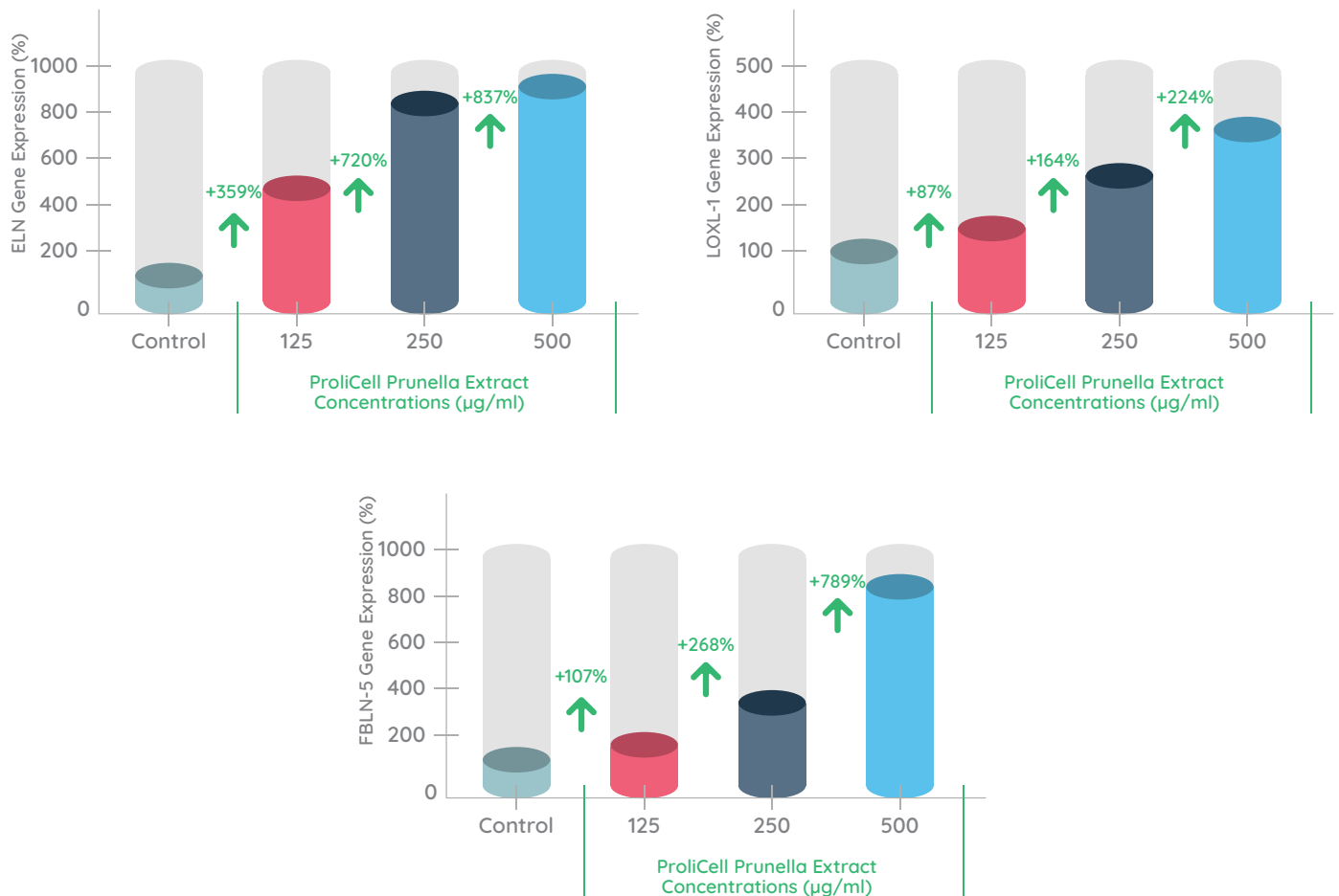


Expression Analysis of Hydration and Proliferation Associated Genes



ProlCell Prunella provides cell proliferation and increases moisture holding capacity of the skin by significantly increasing the expression of AQP3, HAS3, TGFβ1 genes.

Expression Analysis of Elastin-Related Genes



ProliCell Prunella increases skin elasticity and prevents sagging by significantly increasing the expression of ELN, LOXL-1 and FBLN-5 genes.

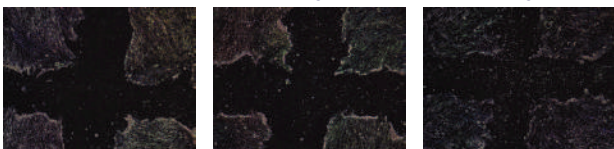
Determination of Wound Healing with the Scratch Assay Method

0. Hour

Control

ProliCell Prunella
250 µg/ml

ProliCell Prunella
500 µg/ml

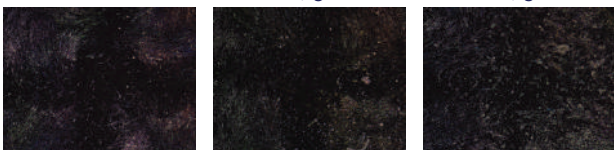


16. Hour

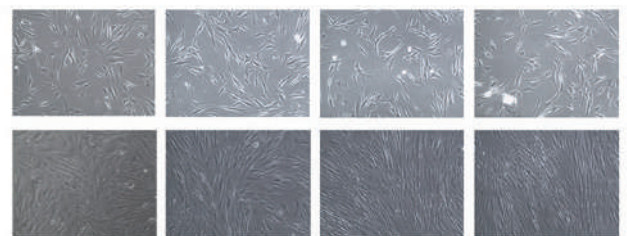
Control

ProliCell Prunella
250 µg/ml

ProliCell Prunella
500 µg/ml



ProliCell Prunella accelerates wound healing by increasing fibroblast migration.



Control

500 µg/ml
PPE

500 µg/ml
PPE

500 µg/ml
PPE

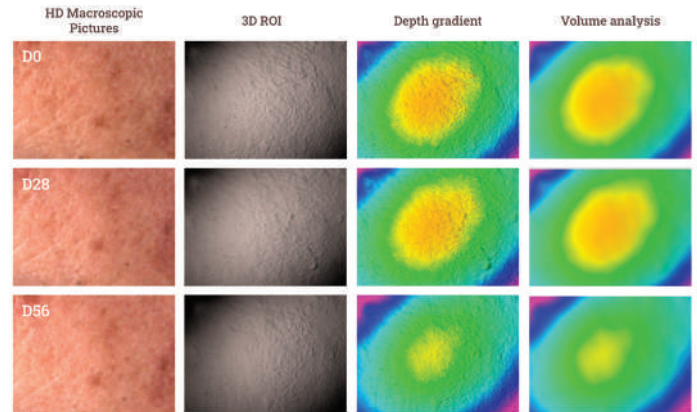
PPE: ProliCell Prunella Extract
EV: Extracellular Vesicle

ProliCell Prunella increases fibroblast migration. It was concluded that when ProliCell Prunella and EVs were used together, fibroblast migration increased depending on the small RNA concentration.

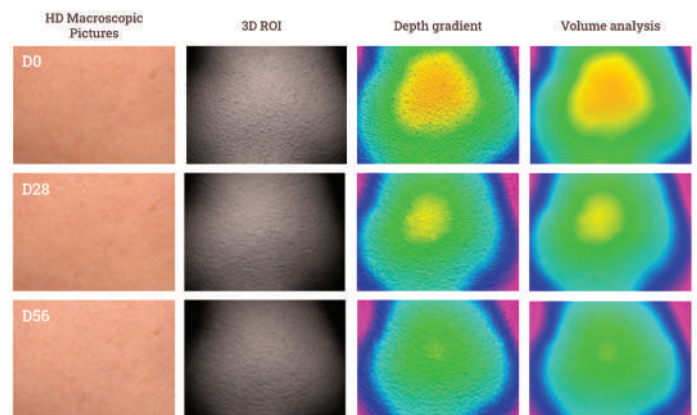
In vivo Efficacy Tests

Anti-Sagging Activity

- A clinical evaluation with the test treatment was initially carried out on 22 volunteers, aged from 40 to 67 years mean 55.8 ± 7.7).
- The volunteers were required to be female, between 35 and 65 years, presenting moderate to very severe facial aging, and a willingness to comply with instructions.
- Anti-sagging Cream (containing 2% ProliCell Prunella) was applied to the volunteers' face twice a day for 56 days.
- Measurements were recorded before starting treatment (D0), after 4 weeks of treatment (D28) and after 8 weeks of treatment (D56).



Effects of the treatment with Anti-sagging Cream in cheekbone volume for Volunteer



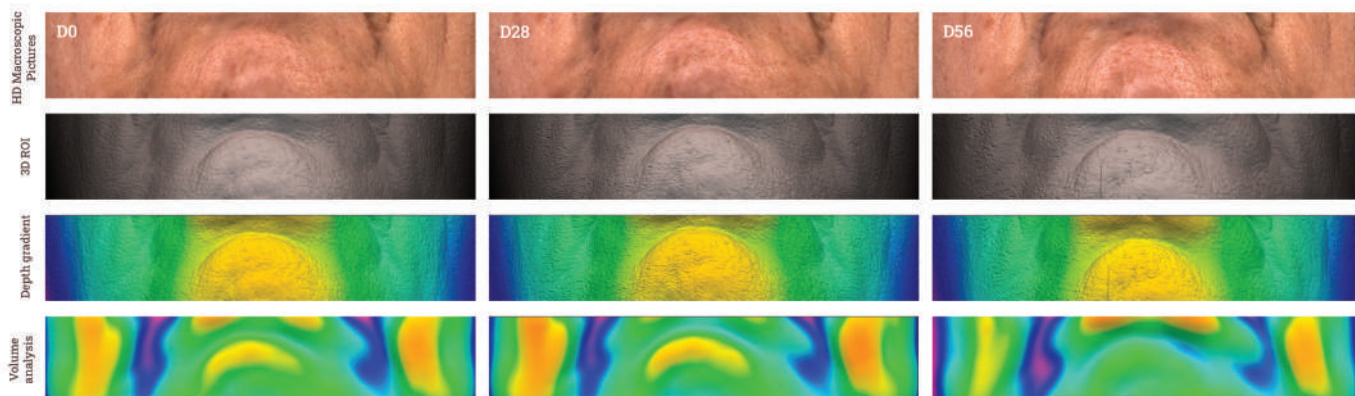
Effects of the treatment with Anti-sagging Cream in jowls volume for Volunteer



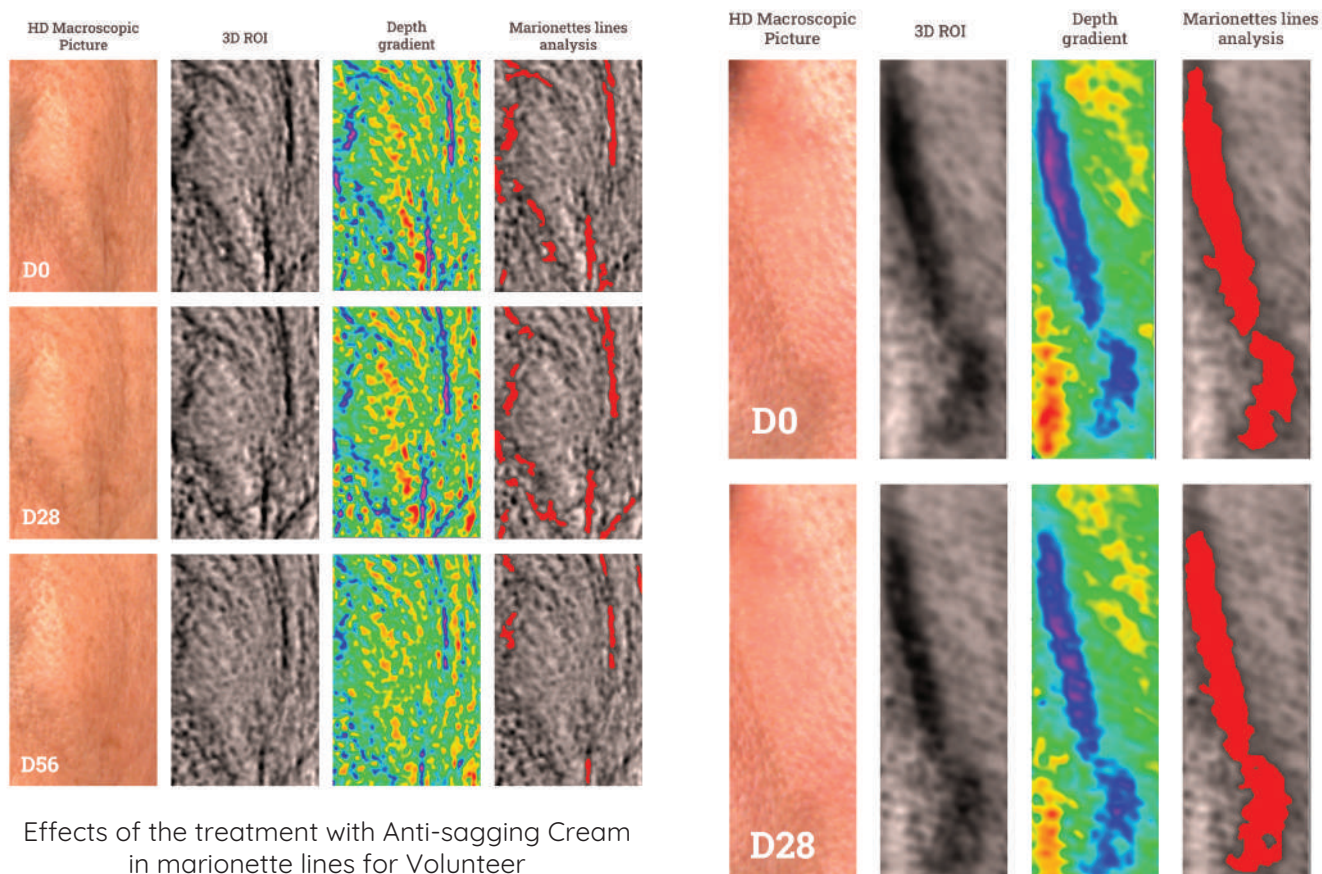
Effects of the treatment with Anti-sagging Cream in 3D section (cheekbone) for Volunteer



Effects of the treatment with Anti-sagging Cream in 3D section (jawline) for Volunteer



Effects of the treatment with Anti-sagging Cream in face oval shape in jawline for Volunteer

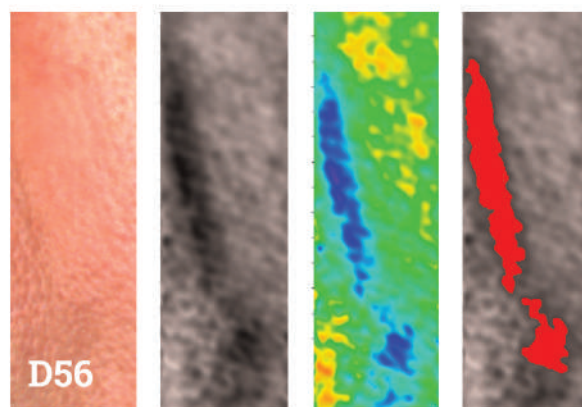


Effects of the treatment with Anti-sagging Cream in marionette lines for Volunteer

The results showed a statistically significant reduction in the number and perimeter of nasolabial folds by 17.5% and 10.2% after 8 weeks of treatment. Treatment with Anti-sagging cream significantly reduced the area, perimeter, and volume of marionette lines by 8.9%, 11.0%, and 8.5%, respectively.

Topical treatment with "Anti-Sagging Cream (containing ProliCell Prunella)" displays anti-wrinkle activity with a statistically significant reduction in marionette lines and nasolabial folds after 8 weeks of treatment, compared to baseline values. It reduces the oval shape in the jawline area, exhibiting face-lifting and anti-sagging abilities after 8 weeks of topical application.

These results were partially subjectively confirmed with the volunteers' perception through the self-assessment questionnaire, reporting an overall acceptance of 86.6 % after 8 weeks of application (D56).



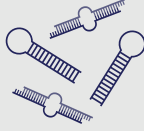
Effects of the treatment with Anti-sagging Cream in nasolabial folds wrinkles for Volunteer

Regeneration with the Elasticity Architect



Effect Mechanisms

- Shows high antioxidant activity.
- Shows anti-wrinkle activity in the nasolabial and marionette area
- Increases the moisture holding capacity of the skin.
- Shows wound healing activity.



Cosmetic Uses

- Anti-wrinkle Products (Face and Skin Care Products)
- Wound Healing Products (Face and Skin Care Products)



ProlCell Prunella DW (Disperses in water)
INCI Name: Glycerin, Prunella vulgaris Leaf Extract, Xanthan Gum

ProlCell Prunella WS (Water soluble)
INCI Name: Glycerin, Prunella vulgaris Leaf Extract, Sodium benzoate, Potassium sorbate
Usage rate: 2-5%
pH: 4.0-7.0



Features

Origin: Herbal
Appearance: Viscous cell lysate suspension
Color: Dark Brown
Odor: Characteristic
Usage: Add below 40°C in cold-hot processes.

