



# CENTELLA

Cellular Regeneration  
Discovery



Wound Healing  
Anti-Aging  
Spot Remover

**ACTV**  
BIOTECH

## Cellular Regeneration

### Discovery

#### Effects

- Promotes cellular regeneration by stimulating the proliferation of fibroblast cells.
- Reduces wrinkles by stimulating collagen and elastin synthesis.
- Increases skin moisture level, elasticity and microcirculation and prevents sagging.
- Prevents the formation of spots on the skin by balancing melanin synthesis.
- Shows wound healing activity thanks to the specific centelloid compounds it contains.

#### Origin

Developed from *Centella asiatica* (Gotu Kola) 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® Centella 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

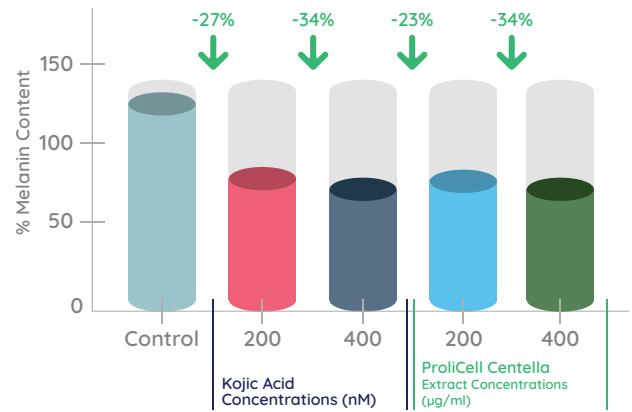
**Cell Line:** Human normal fibroblast, human normal keratinocyte, mouse melanoma cells

**Test Components:** 100, 150 and 200 µg/ml ProliCell Centella extract

**Parameters:** Analysis of COL1A1, HAS3, Elastin and TGFβ1 genes by RT-qPCR, Evaluation of melanin content with in vitro melanin content determination test, Evaluation of wound healing efficiency with the Scratch Assay method

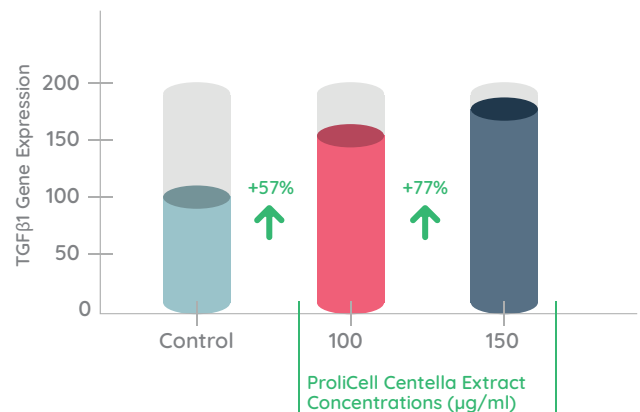
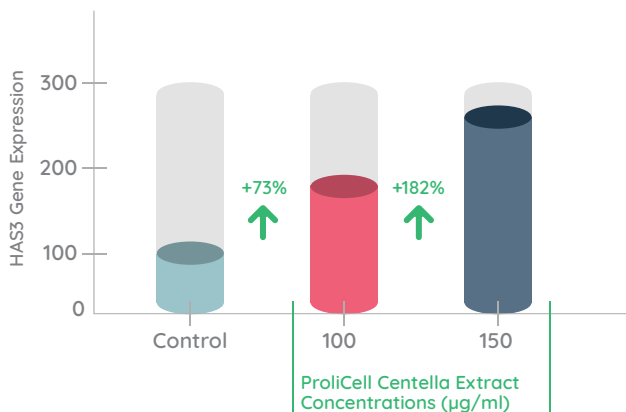
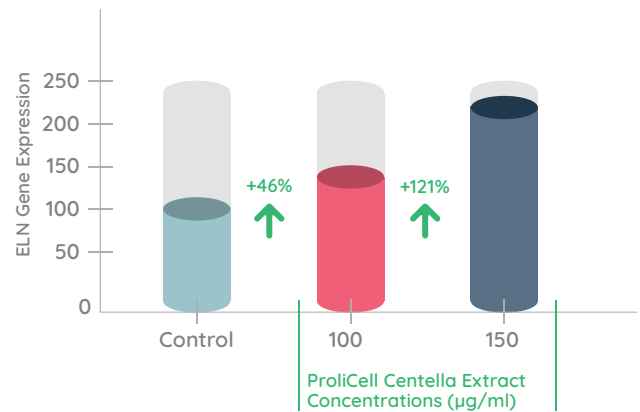
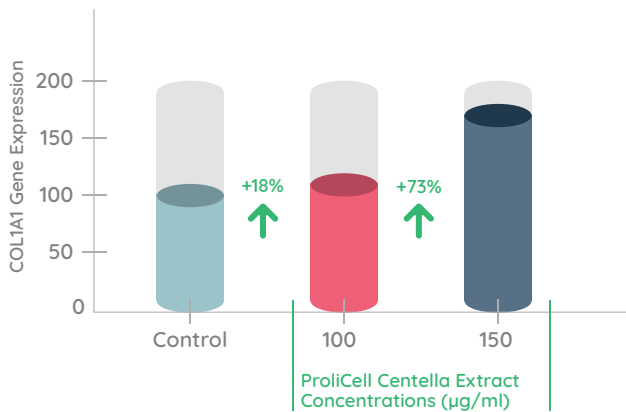
For gene expression analyses, human normal fibroblast cells were incubated with ProliCell Centella concentrations for 24 hours.

## Determination of Melanin Suppression Efficacy



ProliCell Centella suppresses excessive melanin synthesis and reduces skin blemishes.

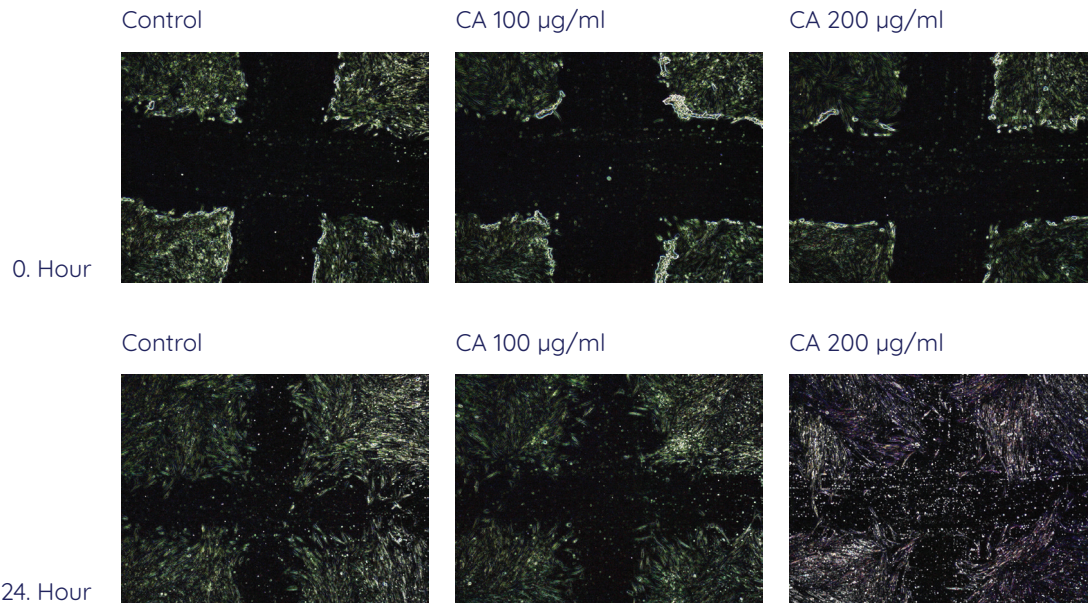
## Gene Expression Analysis



ProliCell Centella shortens the wound healing process by increasing the hydration of the skin and helps regenerate the skin by increasing the expression of wound healing and anti-aging genes.

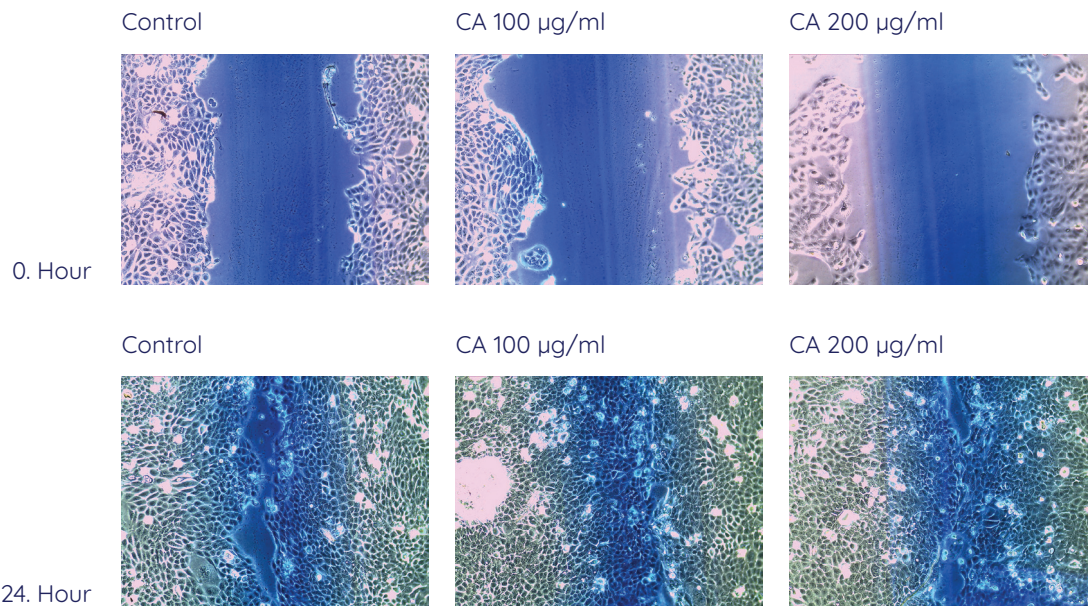
# Activity Tests

## Determination of Wound Healing with the Scratch Assay Method



ProlCell Centella promotes cell proliferation on human normal fibroblasts, allowing faster wound healing.

\*CA: ProlCell Centella



ProlCell Centella promotes cell migration on human normal keratinocyte cells, allowing faster healing of the wound.

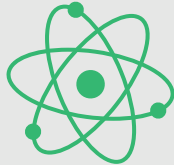
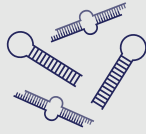
\*CA: ProlCell Centella



## Cellular Regeneration Discovery

### Effect Mechanism

- Anti-aging
- Anti-blemish
- Wound healer



### Cosmetic Uses

- Anti-blemish  
(Face and Skin Care Products)
- Anti-aging Products  
(Face and Skin Care Products)



**INCI Name:** Glycerin, Centella asiatica Callus Extract, Xanthan Gum.

**Usage rate:** 2-5%

**Solubility:** Water-soluble

**Preservative:** No preservative

**pH:** 4.0-7.0



### Features

**Origin:** Herbal

**Appearance:** Viscous cell lysate suspension

**Color:** Yellow-orange

**Fragrance:** Characteristic

**Usage:** Add below 40°C in cold-hot processes.



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