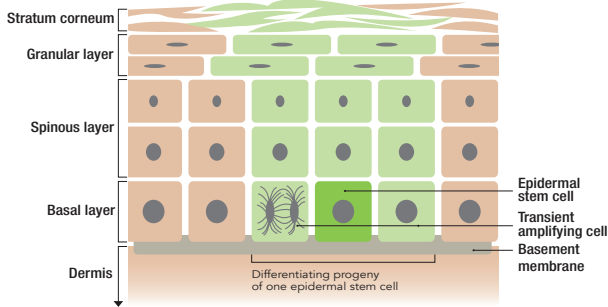


1*

EPIDERMAL STEM CELLS IN THE HUMAN SKIN



1*

Up-Regulation of Specific Genes involved in the Delay of Senescence

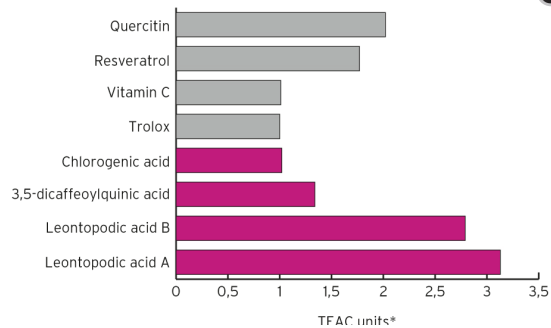
■ Gene, that is down regulated by senescence induction (Control)

■ Gene, that is up regulated or normalized in senescent cells by PhytoCellTec™ Malus Domestica

Genes	after H ₂ O ₂ Control	after H ₂ O ₂ + 2% Malus Domestica stem cell extract
cyclin B1: induces proliferation	73 ↓	130 ↑
cyclin E1: cell cycle regulator	78 ↓	135 ↑
p53: tumor suppressor gene	63 ↓	137 ↑
insulin-like growth factor II: cell proliferation enhancer	71 ↓	117 ↑
heme oxygenase 1: antioxidant enzyme	89 ↓	211 ↑

ANTI-OXIDANT ACTIVITY

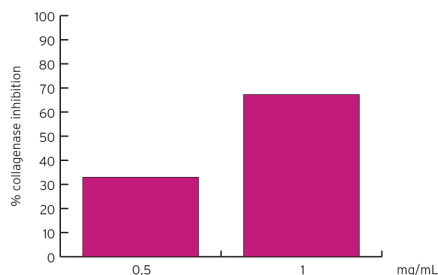
3*



Rich in substances with antioxidant activity higher than that of common natural antioxidant benchmarks

ANTI-COLLAGENASIS ACTIVITY

3*



Inhibits collagenase thus maintaining skin firmness and limiting collagen degradation

PLANT STEM CELL TECHNOLOGY

Plant Stem extracts and Phytonutrients

1* Malus domestica fruit cell culture

Origin: In our Ageless and Sensitive Skin Lines

Stem cells of Spaetlauber apple tree from Switzerland, excellent storability, rich in phytonutrients, proteins and long-living cells.

Functions:

- protects longevity of skin stem cells
- combats chronological aging, redness, breakouts
- protection against oxidative stress, fine lines and wrinkles
- repair of DNA

2 Vitis vinifera fruit cell culture

Origin: In our Ageless, Antioxidant, and Sun Skin Lines

stem cells of rare red-flesh grape cultivar, contains epigenetic factors and metabolites that are able to protect human skin stem cells

Functions:

- protects epidermal stem cells against UV damage
- fights photo aging, protects skin from free radical damage
- Even outs skin tone.

3* Leontopodium alpinum meristem cell culture

Origin: In our Ageless Stem cell products

alpine Edelweiss flower that developed defense mechanisms to survive extreme climatic and environmental conditions

Functions:

- anti-inflammatory
- high in anti-oxidant capacity protecting from free radicals
- penetrate the skins to provide long-lasting moisture, reduce skin sensitivity and strengthen the skin's natural protective barrier.

4 Argania spinosa callus tissue

Origin: In our Hydra and Sun Skin Lines

ancient barber tree from Morocco that belongs to oldest tree species of the world, able to resist extreme droughts and extremely high temperatures

Functions:

- proven effect on dermal stem cells, can nourish, protect elasticity, used as a moisturizer and emolient
- vitalizes dermal stem cells, which are responsible for collagen and elastin production
- fights wrinkles and loss of firmness, rich in fatty acids

5 Leucojum aestivum bulb extract

Origin: In our Ageless and Antioxidant Skin lines

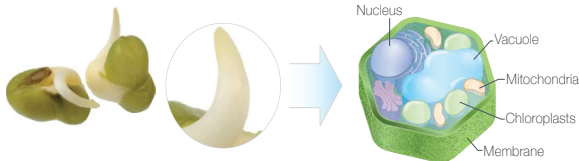
Summer snowflake flower, survives in extreme climates

Function:

- slows down cell proliferation, and the aging process
- youth preservation, elasticity, protects against skin stressors
- BOTOX like effect on muscle contraction

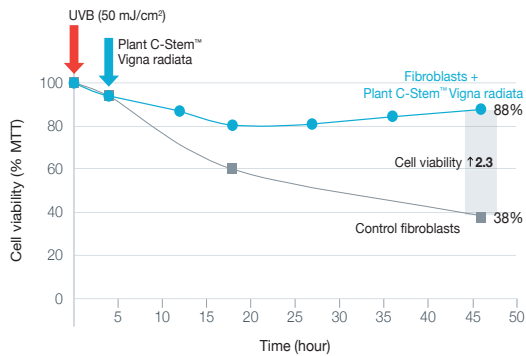
Cells are grown from active *Vigna radiata* meristematic tissues

6*



Rescue of UV-damaged skin fibroblasts with Plant C-Stem™ *Vigna radiata*

6*



■ The addition of Plant C-Stem™ *Vigna radiata* increased cell viability by 2.3-fold
 ■ The Plant C-Stem™ *Vigna radiata* stem cell vacuole extract rescued the viability of human skin fibroblasts previously exposed to UVB

6* Phaseolus radiata meristem cell culture extract
Origin: *In our Sun, Sensitive, and Hydra Skin Series*

Vigna radiata, mung bean sprouts, selective extraction of the vacuolar content, plant is capable of protecting against various environmental stressors

Functions:

- decrease of pro-inflammatory mediators and extra cellular matrix degradation enzymes
- increase in collagen, moisturizes, attracts moisture from the air and deepest layers to the skin surface for hydration
- rescue of UV damaged fibroblasts: UV damage repair, reduced photodamage

7 Echinacea angustifolia stem cells

Origin: *In our Sensitive and Hyperpigmentation Skin Lines*

Herbaceous plant, stem cells are extracted from buds or root tips, these undifferentiated cells are activated to produce bioactives, Echinacosides

Functions:

- Fades dark circles
- reduces capillary permeability, by nitric oxide reduction
- reinforces the capillary wall
- strengthens thin and delicate skin, stimulates collagen synthesis

8 Sulfora White

Origin: *In our Hyperpigmentation Skin Line*

Liposomal preparation of swiss garden cress sprouts rich in sulforaphane, a powerful antioxidant phytonutrient

Functions:

- effectively inhibits melanin production
- provides brightening benefits
- fades the appearance of dark spots and discolorations

9 Opunthia ficus-indica stem extract

Origin: *In our Sensitive and Hydra Skin Lines*

Ultra refined elixir from organic paddle cactus

Functions:

- blocks release of stress chemicals, maintains moisture
- soothes and firms irritated skin

10 Epilobium angustifolium stem extract

Origin: *In our Sensitive, Ageless, and Oil Control Skin Series*

Canadian Willowherb is a natural plant from the Northern Canadian prairies which has developed strong multi-functional phytochemical properties to survive the harsh climate. The plant extract contains bioactive molecules

Functions:

- free radical scavenger, calms the skin
- Controls sebum production, reduces pore size
- reduces erythema caused by UV radiation