

A MAJOR ADVANCEMENT IN BOTANICAL INGREDIENTS

CULTURING PLANT CELLS

May 2011



RESOURCES OF
NATURE

REASONS TO IMPROVE BOTANICAL INGREDIENTS

⊙ Purity

- ⊙ Trace pesticides and other environmental pollutants including heavy metals
- ⊙ Certified Organic may contain aflatoxins from molds known to be carcinogenic

⊙ Quality

- ⊙ Never consistent, dependant on growth and harvest, extraction methods
- ⊙ Brown in color – often oxidized

⊙ Activity/Efficacy

- ⊙ Often limited – dependant of solvent used in extraction, not standardized
- ⊙ Often oxidized – brown in color, odor, undesired phyto-chemical allergens.

⊙ Not Eco-friendly

- ⊙ Consumption of soil, water, methane release in tilling land, agro chemicals

HOW TO IMPROVE BOTANICAL INGREDIENTS

🎯 **Culturing Plant Cells**

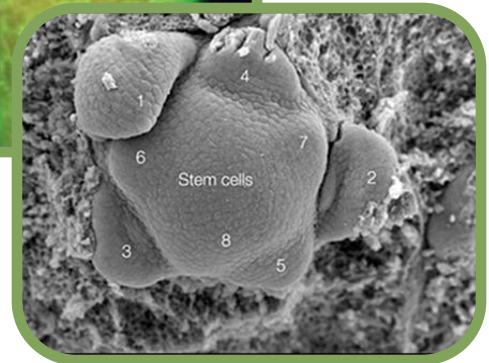
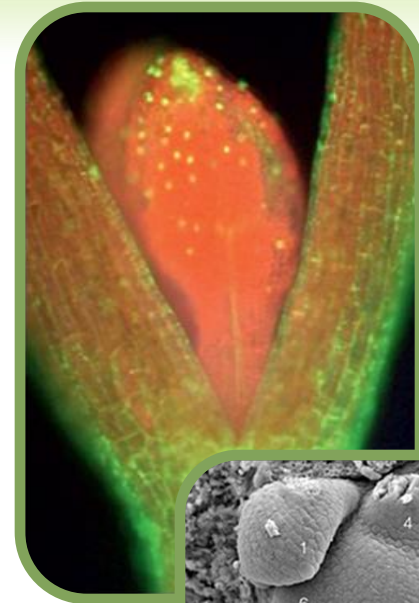
- 🎯 Improves Purity
- 🎯 Improves Quality
- 🎯 Improves Efficacy
- 🎯 100% Eco-responsible
- 🎯 Is a non-GMO process
- 🎯 Meets colorless requirement of cosmetics



FINDING THE MOST ACTIVE PLANT CELLS

◎ Meristematic Plant Cells

- ◎ Undifferentiated plant cells
- ◎ Found in buds or root tips
- ◎ Support tissue repair and protection
- ◎ Offers many benefits for human skin
- ◎ Concentrated in life promoting antioxidants

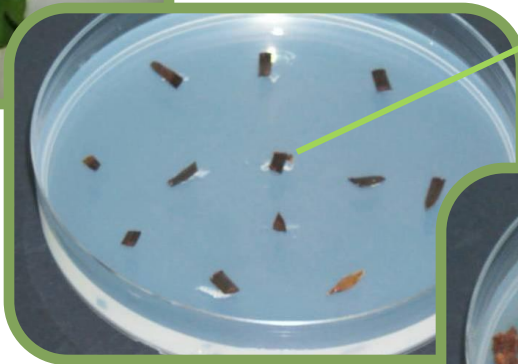


A NATURAL PROCESS FOR CREATING PLANT CELLS CULTURES

Plant Tissue Damage



Callus formation



Strain Selection

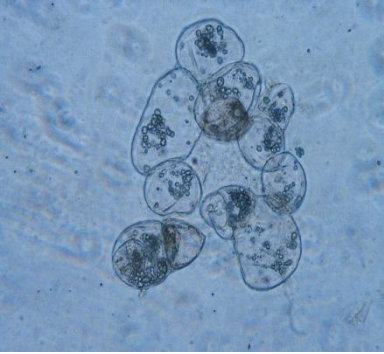


Plant Cell Line



Callus formation





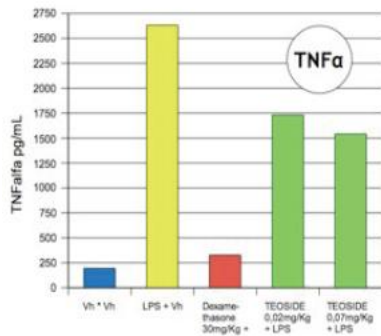
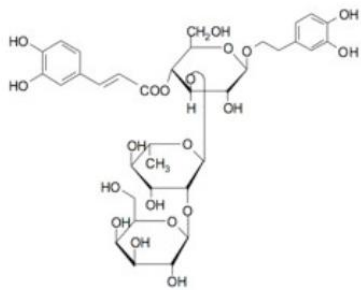
RARE & POTENT ANTIOXIDANTS FROM PLANT CELLS

- ◎ Blue Bugle (Ajuga Reptans) – **Teupolioside*** (10%)
- ◎ Buddleja davidii – **Verbascoside, Isoverbascoside, Leucosceptoside A**
- ◎ Centella asiatica - **3-5 dicaffeoylquinic-4-malonic acid**
- ◎ Echinacea angustifolia - **Echinacoside *** (up to 25%)
- ◎ Edelweiss- **Lenotopodic acid & chlorogenic acid**
- ◎ Gardenia Jasminoides – **Feruloyl-6-Glucoside**
- ◎ Lilac– **Verbascoside*** (up to 50%)
- ◎ Marrubium Vulgare – **Forsynthoside B, Vebascoside**

* Standardized



DISTINCTIVE PHYTOSTEM AJUGA REPTANS (BLUE BUGLE)



- ◎ **Ajuga Reptans Cell Culture Extract**
- ◎ Standardized to 10% Teupolioside
- ◎ Acid stable antioxidant
- ◎ Anti-inflammatory activity
- ◎ Wound healing
- ◎ Unique ingredient open for exclusivity
- ◎ Published for oral applications
- ◎ Many possibilities for topical use.

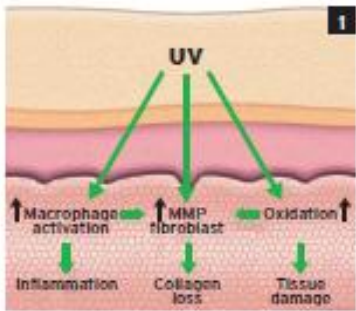


DISTINCTIVE PHYTOSTEM BUDDLEJA

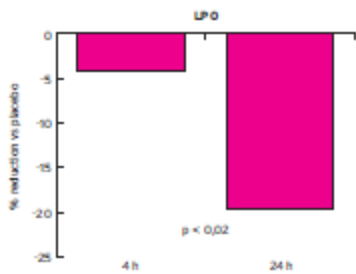
- ◎ **Buddleja Davidii Meristem Cell Culture**

- ◎ 20% whole cells suspended in glycerin

- ◎ **ACTIVITY:** protection from UV-induced oxidative stress, inhibition of inflammation, control of UV-induced matrix metalloproteinase (MMP) activation



- ◎ **CLINICAL EVIDENCE:** The application of a cream containing 2% of *Buddleja davidii* stemg GTM demonstrates to be a broad and highly effective protection from UVA photodamage even vs placebo:



- ◎ significant preservation of the lipid component of the skin from oxidative stress
- ◎ significant increase of the antioxidant resistance of the skin



DISTINCTIVE PHYTOSTEM CENTELLA

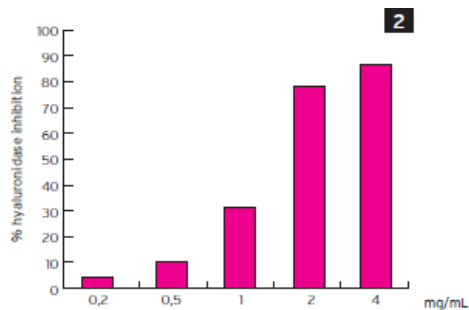
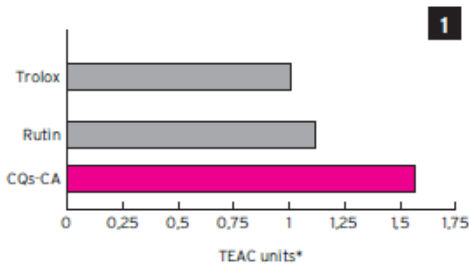
① Centella Asiatica Meristem Cell Culture

② 20% cells suspended in glycerin

③ ACTIVITY:

- ④ anti-oxidant activity
- ④ anti-hyaluronidasic activity
- ④ anti-inflammatory
- ④ vasoactive effect

④ **SKIN CARE BENEFITS:** Deep firming activity to improve skin tone and elasticity. Firming and restructuring body products (support for treatment of cellulitis, stretch mark and blood vessel tone disorders).





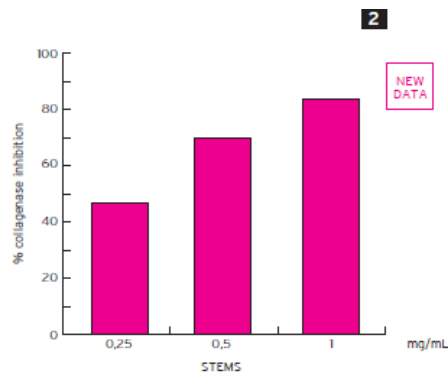
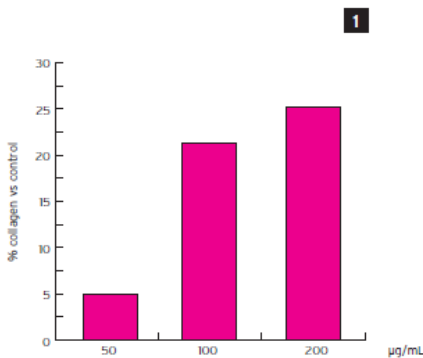
DISTINCTIVE PHYTOSTEM ECHINACEA

🎯 Echinacea Meristem Cell Culture

🎯 20% whole cells suspended in glycerin or standardized powder to echinacosides.

🎯 ACTIVITY:

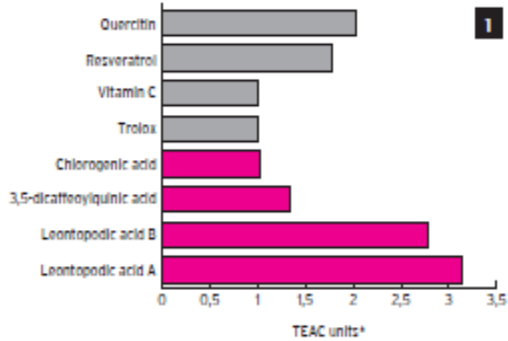
- 🎯 stimulation of new collagen synthesis
- 🎯 anti-collagenase activity



🎯 **SKIN CARE BENEFITS:** Anti-stress boost for dull and tired skin ,everyday skin care products dedicated to the protection of sensitive skins, especially for the areas mainly exposed to environmental stresses



DISTINCTIVE PHYTOSTEM EDELWEISS



① Leontopodium Alpinum Meristem Culture

② 20% whole cells suspended in glycerin

③ **ACTIVITY:**

④ anti-oxidant activity

④ anti-hyaluronidasic activity

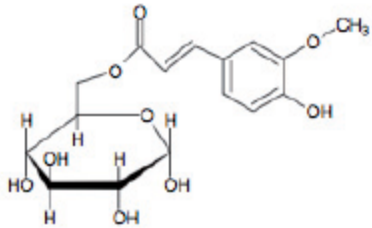
④ anti-collagenasic activity



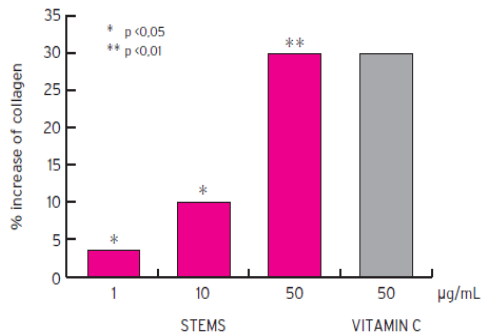
④ **SKIN CARE BENEFITS:** Reduces by 15% wrinkle depth of the eye contour area after only 20 days of treatment.



DISTINCTIVE PHYTOSTEM GARDENIA



feruloyl-6-glucoside



🎯 Gardenia Jasminoides Meristem Cell Culture

🎯 20% whole cells suspended in glycerin

🎯 ACTIVITY:

🎯 boosting collagen synthesis

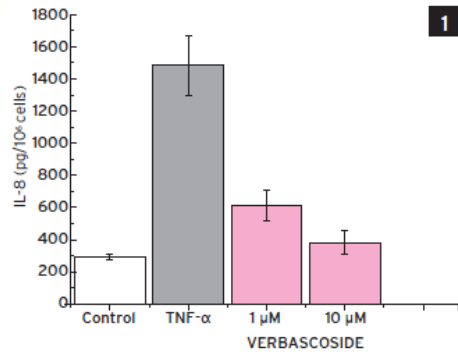
🎯 reducing collagen degradation

🎯 inhibiting collagenase synthesis

🎯 **SKIN CARE BENEFITS:** prevention of collagen loss in aged or prematurely aged skin (over 30s) and restore the balance of collagen loss in aged skin (over 40s)



DISTINCTIVE PHYTOSTEM LILAC

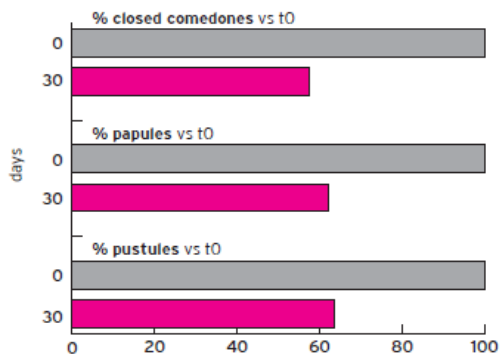


◎ **Syrina Vulgaris Leaf Cell Culture Extract**

◎ 10% and 50% standardized powder

◎ **ACTIVITY:**

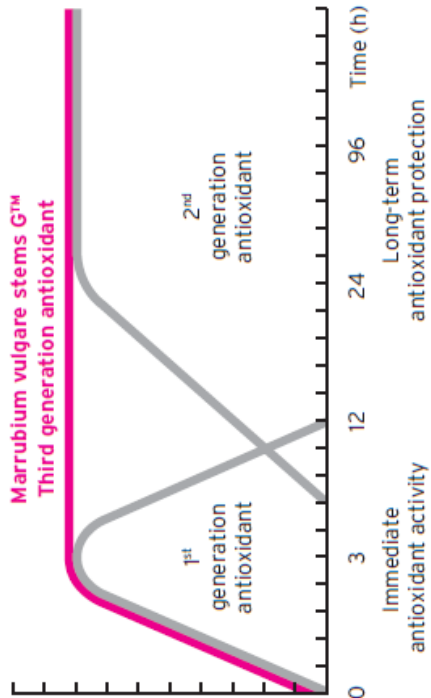
- ◎ anti-inflammatory activity
- ◎ sebum regulating activity
- ◎ anti-malassezia furfur activity
- ◎ Acid stable molecule
- ◎ Acne bacteria inhibitor



◎ **SKIN CARE BENEFITS:** 30 subject clinical study for acne is available.



DISTINCTIVE PHYTOSTEM MARRUBIUM



- ◎ **Marrubium Vulgare Meristem Cell Culture**
- ◎ 20% whole cells suspended in glycerin
- ◎ **ACTIVITY:**
 - ◎ immediate protection through strong radical scavenging
 - ◎ long-term protection through maximization of skin cell defensive systems
- ◎ **SKIN CARE BENEFITS:** The first and unique third generation antioxidant: ensuring multi-phase protection through radical scavenging and maximization of skin self defensive systems

PLANT CELL CULTURES OFFER:

- **HIGHEST PURITY**
- **MAXIMUM SUSTAINABILITY**
- **EFFICACIOUS ACTIVITY**

THANK YOU

May 2011

RESOURCES OF
NATURE

The logo consists of a stylized leaf icon to the left of a hexagonal structure. The hexagonal structure is composed of several interconnected hexagons, with the letters 'R', 'O', and 'N' placed inside some of them. Below the main text 'RESOURCES OF NATURE', there is a decorative green bar with a light green gradient at the bottom of the slide.