# Distinctive®Phytostem Buddleja

INCI: Glycerin, Buddleja davidii Meristem Cell Culture, Xanthan Gum

October 18, 2010 rev.

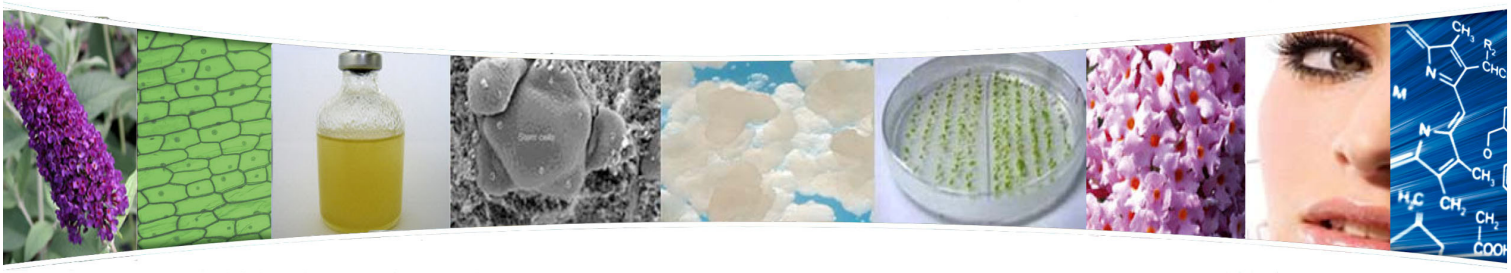
## Plant Tissue Culturing

In recent years, researchers have successfully developed active ingredients through *plant tissue culturing*. Many medicinal, nutritional and cosmetic active ingredients have been enhanced through this technology.

**Resources of Nature**, in partnership with global leaders in this field, can now selectively harvest cells from a plant, allowing the utilization of even the most rare plant species without harm. These cells are specially cultivated to generate cultures rich in plant stem cells and complex compounds. These specifically designed plant cell cultures act as nature-made liposomes and are fully compliant with the skin, perfect for delivering their contents of powerful antioxidants and cell regenerating molecules.

Up until recently, harvesting these highly active cells had been extremely difficult and expensive. Through advances in the most specialized processing technologies, they are now available in quantities feasible for commercialization for cosmetic applications as "**Distinctive® Phytostem Cell Ingredients**".

Compared to standard botanical extraction methods, this highly sustainable, eco-friendly technology provides higher purity products with up to 1000 times the active molecule concentrations, and because of their highly controlled production techniques, Distinctive® Phytostem Cell Ingredients meet and exceed Certified Organic and Bio-Eco Cosmesi guidelines.



**Distinctive® Phytostem Buddleja** was developed through specific plant tissue culturing of Buddleja davidii, a beautifully fragrant and colorful plant, native to Eastern Asia. This hardy shrub has very few natural enemies and has long been studied for its history of use in traditional and ayurvedic medicine where, for centuries, it has been used for its wound healing, anti-inflammatory and anti-bacterial properties.

Cultivars of this species are most recognizable as ornamental plants in temperate regions of the world. It can be found brightening up gardens throughout Europe and North America. Most commonly referred to as summer lilac, orange eye, or butterfly-bush, buddleja is often placed in gardens to attract wildlife, such as butterflies and hummingbirds that flock to their cone shaped clusters of pink, purple, mauve, red, blue, orange blossoms.

Distinctive® Phytostem Buddleja delivers the healing and regenerative properties of stem cells, while providing broad and highly effective protection against oxidative stress and photodamage. Phytochemical analysis of Distinctive® Phytostem Buddleja has revealed that it is rich in compounds with potent antioxidative activity and effective, broad protection activity against environmental stress: verbascoside, isoverbascoside, leucosceptoside A, martinoside, phytosterols, flavonoids, amino acids and polysaccharides.

- Healing
- Free Radical Scavenging
- Anti-Oxidant
- Sun Protective
- Anti-Inflammatory
- Moisturizing
- Photoprotective
- Anti-Aging

RESOURCES OF NATURE

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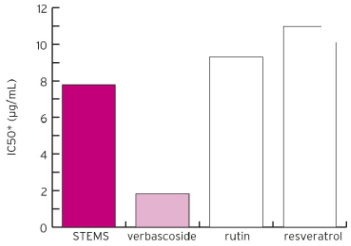
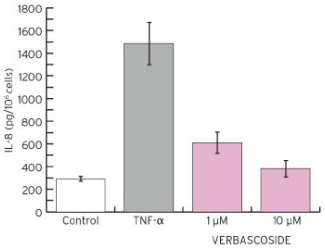
**ANTI-OXIDANT ACTIVITY (in-vitro)**




Activity significantly higher than that of common natural antioxidant benchmarks

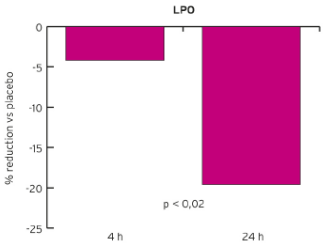
**ANTI-INFLAMMATORY ACTIVITY (in-vitro)**



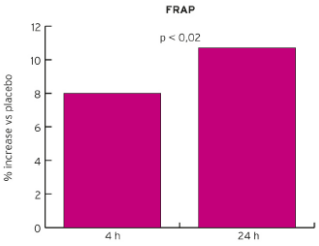

Strong anti-inflammatory activity: Dose-dependent decrease of IL-8 expression on primary cultures of human keratinocytes stimulated by TNF-α

**CLINICAL EVALUATION**

10 subjects treated daily for 5 days with O/W cream containing 2% Distinctive®Phytostem Buddleja. Skin tape stripping and determination of lipid peroxides (LPO) and total antioxidant capacity (FRAP) after fixed dose UVA irradiation (15 J/cm2)



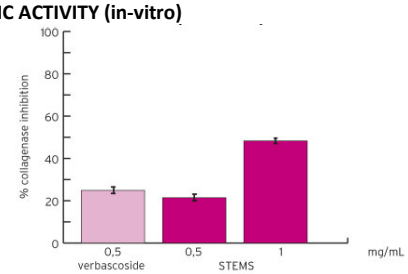

Distinctive® Phytostem Buddleja Demonstrates broad and highly effective protection against UVA-photo-damage, even vs placebo




Significant protection of skin lipids from oxidative stress

Significant increase of the antioxidant resistance of the skin

**ANTI-COLLAGENASIC ACTIVITY (in-vitro)**




Inhibits collagenase more efficaciously than purified verbascoside thanks to the synergistic effect of its constituents

| **TYPICAL PROPERTIES** | **DISTINCTIVE® PHYTOSTEM BUDDLEJA** |
|---|---|
| Composition | Buddleja davidii Cell Cultures 20%, Glycerin 80%, Xanthan gum 0.3% |
| Appearance | Amber colored liquid |
| Aflatoxins | Absent |
| GMO | Absent |
| Pesticides | Absent |
| Microbiology | Total microbial count: Bacteria < 100 UFC/g |
| Packaging | 1 kg |
| Storage | Store the product in the original, well closed container, in a cool, dry area and protected from light |
| Shelf Life | 12 months |

| **FORMULATION GUIDELINES** | Use Level: 0.5 – 1.0 %<br>Compatible with O/W emulsions, serum. Introduce during the cooling phase. pH ≤ 5 |
|---|---|



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