

Distinctive® Phytostem Echinacea Dry 25C

INCI: Maltodextrin, Echinacea angustifolia Cell Culture Extract

October 19, 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.



Echinacea angustifolia, also known as elk root or purple coneflower is a drought-tolerant perennial herb, native to North America. Early Native Americans discovered its medicinal benefits long ago by observing elk seeking out the plants and consuming them when sick or wounded. Since then, echinacea has a long history of use to help stimulate the immune system, suppress infection and help control pain and inflammation.

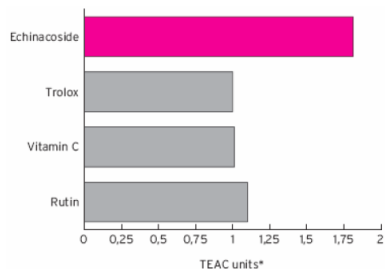
Scientists have identified specific chemical constituents contributing to the health effects of echinacea including phytosterols, amino acids, polysaccharides, alkylamides, phenylpropanoids, phenolic derivatives and substances like echinacoside, chlorogenic acid, cynarin, 3,5-dicaffeoylquinic acid. **Distinctive® Phytostem Echinacea Dry 25C** is specifically cultured to maximize the production of these stress fighting and immunity boosting agents along with regenerating and healing stem cells to sooth and revitalize dull, stressed skin.

- ◆ Healing / Restructuring
- ◆ Hydrating
- ◆ Anti-Oxidant
- ◆ Anti-Aging
- ◆ Soothing
- ◆ Anti-Stress
- ◆ Revitalizing
- ◆ Anti-Inflammatory
- ◆ Anti-Bacterial
- ◆ Free Radical Scavenging

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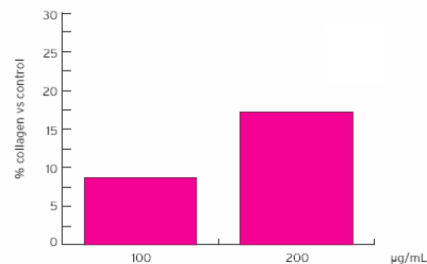
ANTI-OXIDANT ACTIVITY



Echinacoside has a considerable antioxidant activity higher than that of common natural antioxidant benchmarks.

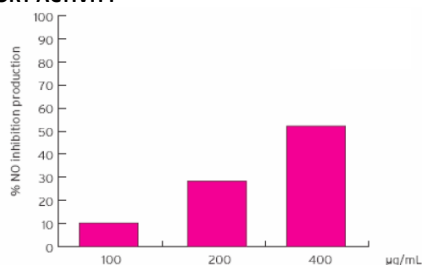
* TEAC (Trolox Equivalent Antioxidant Capacity) assay measures the antioxidant capacity of a substance compared with that of Trolox.

STIMULATION OF COLLAGEN PRODUCTION ACTIVITY



ED25C stimulates the synthesis of new collagen on in vitro cultures of human fibroblasts.

ANTI-INFLAMMATORY ACTIVITY



ED25C significantly inhibits the production of the biological messenger nitric oxide (NO), thus limiting the inflammation processes and controlling blood vessel tone.

TYPICAL PROPERTIES

Composition
Appearance
Solubility
Preservatives
Aflatoxins
GMO
Pesticides
Microbiology
Packaging
Storage
Shelf Life

DISTINCTIVE® PHYTOSTEM ECHINACEA DRY 25C

Echinacea angustifolia (Asteraceae) cell cultures extract titrated at 25% of echinacoside
Excipients: maltodextrins
Amber-colored powder
Freely soluble in water (Eur. Ph. 5th Edition)
Absent
Absent
Absent
Absent
Total microbial count: Bacteria < 100 UFC/g
1 kg
Store the product in the original, well closed container, in a cool, dry area and protected from light
24 months

FORMULATION GUIDELINES

Use Level: 0.2 – 1.0 %
Compatible with O/W emulsions, serum. Introduce during the cooling phase. pH ≤ 5

SAFETY

Safety tested for both cosmetic and nutritional applications

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