

Anti-aging

Anti-rosacea

Anti-inflammatory

Anti-oxidant

Anti-photoageing

INCI: water, glycerine, Dracocephalum ruyschiana callus extract.

Effective for skin proliferation, boosts production of collagen and protects skin from UV-induced stress

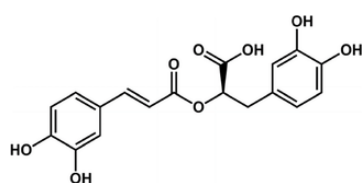
About

DragonCell is an extract derived from Northern dragonhead (*Dracocephalum ruyschiana*) stem cells. It contains high concentration of phenolic substances. Among them >60% are caffeic acid derivatives, including rosmarinic acid and chlorogenic acid. These are well known antioxidants with beneficial biological activities, **including anti-inflammatory, anti-ageing and anti-rosacea.**

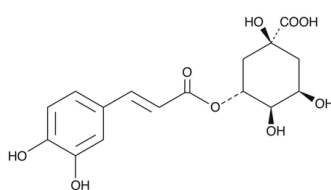
The Plant



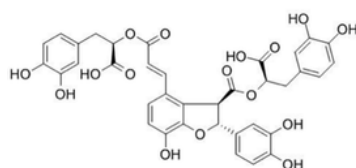
Dracocephalum ruyschiana: Chemical composition



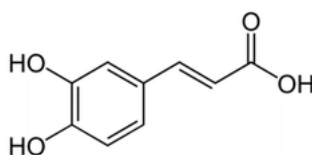
Rosmarinic acid



Salvianolic acid B



Chlorogenic acid (in case of light cultivation)



Caffeic acid

Dracocephalum ruyschiana

Northern dragonhead is becoming more scarce in the wild because its habitats are threatened due to the growing overexploitation of the land and out competition by other plant species.

- Rare and fragmented populations in Europe;
- Listed on the Red Book in Baltic Sea region;
- Included in the Strictly protected flora species list of the Convention on the Conservation of European Wildlife and Natural Habitats.

More Information:

www.alternativeplants.eu



ALTERNATIVE PLANTS

Contacts:

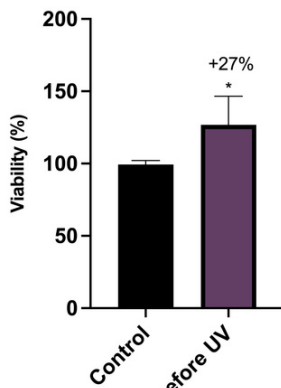
products@alternativeplants.eu

Efficacy

DragonCell acts towards various mechanisms:

- Boosts proliferation of dermal and epidermal cells reversing skin ageing processes;
- Inhibits activity of collagen degrading enzymes;
- Protects skin from photoaging and environmental stress induced skin damages, maintaining skin cell viability and proliferation rate;
- Angiogenesis regulating activity.

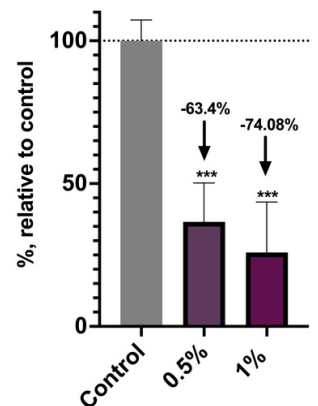
Viability of HaCaT keratinocytes after UV treatment



DragonCell **boosts capability of skin keratinocytes to resist UV light induced stress** – after exposure to UVA/UVB viability of keratinocytes preincubated with 1% DragonCell is 27% higher than control.

Reduces expression and secretion of collagen degrading enzyme MMP-1 **protecting from photoaging and environmental stress induced collagen breakdown** (in vitro test in dermal fibroblasts)

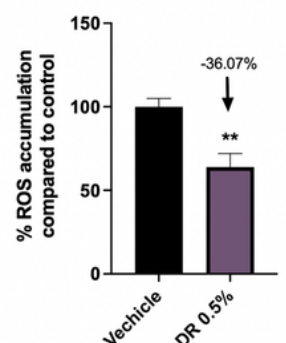
MMP-1 expression in dermal fibroblasts (48h)



DragonCell **at concentrations 0.5% and 1% regulates proliferation of endothelial cells**, formation and branching of capillaries. This makes DragonCell a valuable ingredient for anti-cuperoze and anti-rosacea applications.

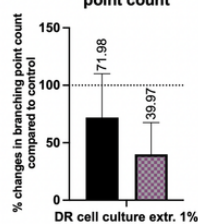
1% extract modulated endothelial cell (HUVEC) tubule length and branching (real-time cell monitoring, automated time-lapse microscopy, n=4).

ROS accumulation in UV-treated HaCaT keratinocytes

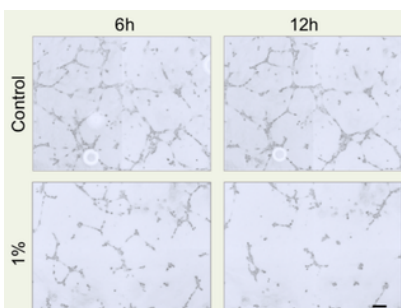
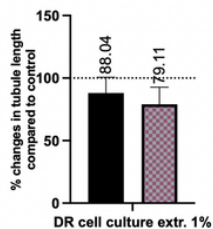


36% reduction of ROS accumulation HaCaT keratinocytes treated with UV (flow cytometry, n=3)

Tubule branching point count

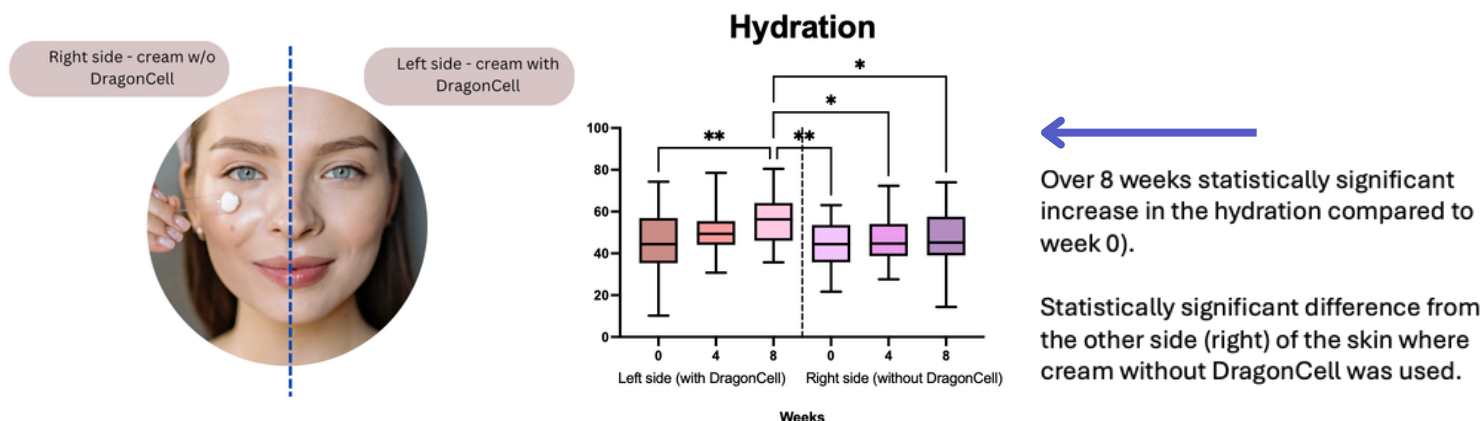


Tubule length



DragonCell

In vivo data



Technical specification – data sheet

Product	DragonCell <i>INCI: Glycerin (and) aqua (and) Dracocephalum ruyschiana callus extract</i>
Appearance	Light brown to dark brown, slightly opalescent. Formation of small amounts of precipitate might be observed and does not affect product quality.
Odour	Characteristic
pH	6.5 ± 1 at room temperature (22... 25 °C)
Solubility	Water soluble
Density	1.10 – 1.20 g/l at room temperature (22... 25 °C)
Total phenolic content	>200 µg/ml gallic acid equivalents (Folin-Ciocalteu method)
Microbiological quality (total plate count)	Aerobic mesophilic bacteria < 100 cfu/g (ISO 21149) Yeasts < 100 cfu/g (ISO 16212)
Recommended concentration for use in cosmetic products	0.5 – 1.0 %
Shelf life and storage conditions	12 months Store in room temperature, protect from light.