

ARABIAN COTTON^{PRCF}

The **BROAD SPECTRUM** protector against photo-aging.



ARABIAN COTTON^{PRCF} achieves the next step in Photo-dermatology: Global protection

- Broad Spectrum Natural Photoprotection against Solar Radiation (UV/VIS/IR)
- BIO-protection against Photo-Induced Aging

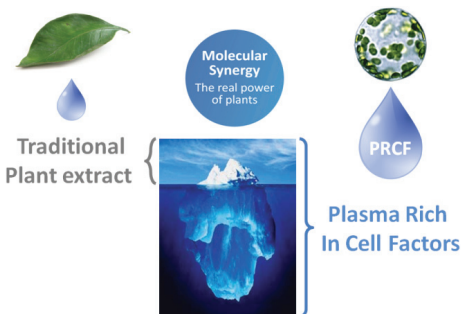
ARABIAN COTTON^{PRCF} is the natural booster to overcome photo-aging.

A GREAT TECHNOLOGY BEHIND

As expert developer of plant cell cultures, Phytore Biotech launches a new range of products based on the technology of plant stem cells introducing: **Plasma Rich in Cell Factors™ (PRCF)**.

PRCF is the Company innovative approach to the phenomenon and proprietary concept of **Molecular Synergy**: the new way to take advantage of the real power of plants.

PRCF arises from our **Plant Cell Biofactories™ (PCB) Technology**. This technology is based in a driven development process that is designed to enrich the cell culture in several fractions of active molecules in sync, targeting the molecular synergy phenomenon.



DESCRIPTION

ARABIAN COTTON^{PRCF} is a glycerin based product derived from the cultured and lysed plant stem cells from *Gossypium herbaceum* (the Arabian Cotton) obtained by our Plant Cell Biofactories™ Technology.

Gossypium herbaceum, the Arabian Cotton, is a native plant from semi-arid regions of sub Saharian Africa and Arabia. Due to these hard environmental conditions, the Arabian Cotton has developed a great diversity of **defensive molecules** (phenolics and flavonoids) that helps the plant cell to protect and repair its structures against sun damage.

Greatly acknowledged, the sun is one of the main damaging agents of the skin causing **direct acute damages** like sunburn, erythema or inflammation as well as important **several chronic skin damages** that develop into photo-aging and an increased risk of developing skin cancer.

ARABIAN COTTON^{PRCF} is enriched and standardized in a characteristic phytocomplex of polyphenolics from this extremophile plant that, topically applied, can complement and boost the skin cells' own defense mechanisms to overcome the photo-damage and photo-aging caused by sun radiation.

ARABIAN COTTON^{PRCF} emerges as the global resource against photo-damage and photo-aging covering the whole solar spectrum thanks to its new innovative natural activity in the field of photoprotection: **IR photoprotection (Patent Pending*)**.

APPLICATIONS

- 1. PHOTO-INDUCED AGING PREVENTION:** Inflam-Aging, IR'Aging, UV'Aging, Thermal'Aging, Sun deAGE.
- 2. BROAD SPECTRUM PROTECTION:** UV/VIS/IR, Reparative, Soothing.

INCI

Glycerin (and) *Gossypium Herbaceum* (Cotton) Callus Culture (and) Glucunolactone (and) Sodium Benzoate. China approved INCI also available.

FORMULATION

Water and ethanol soluble. Incorporation during the cooling phase (<40°C).

DOSAGE

Suggested use level: 0.5 – 2%.

DECLARATIONS

Free of: GMO, BSE, listed CMR, VOC, heavy metals, listed allergens, parabens, phenoxyethanol, aflatoxins, pesticides and contaminants.

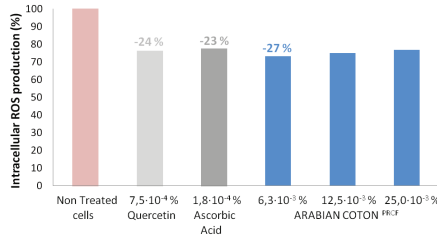
* P 201530157 - Cotton cell cultures and its use in photoprotection.

IN VITRO EFFICACY

1. Broad spectrum antioxidant activity (UVB-UVA-VIS-IR).

- Human Dermal Fibroblasts (HDF).
- 24h pre-treatment with ARABIAN COTTON^{PRCF}.
- Irradiation with an IR lamp Phillips - Infrared lamp hard glass – BR125 Red (250W, 230V).
- ROS levels measured as Median Fluorescence Intensity (MFI).

Protection Index in ROS production against IR radiation.



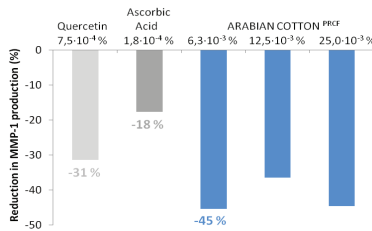
Up to 35% of Protection Index in ROS production against Sun radiation*.

Up to 27% of Protection Index in ROS production against IR radiation*.

2. Broad spectrum photoprotection activity (UVB-UVA-VIS-IR).

- Human Dermal Fibroblasts (HDF).
- 24h pre-treatment with ARABIAN COTTON^{PRCF}.
- Irradiation with an IR lamp Phillips - Infrared lamp hard glass – BR125 Red (250W, 230V).
- MMP-1 levels detected by ELISA.

Protection Index from MMP-1 production against IR radiation.



Up to 107%, 75% and 59% of Protection Index* in Type III Collagen, Type I Collagen and Elastin degradation, respectively, against Sun radiation*.

Up to 45% of Protection Index in MMP-1 (collagenase) production against IR radiation*.

3. Modulation of inflammatory response in Human Epidermal Progenitor Cells.

Study of the inhibition of the production of inflammatory mediators, including IL-1 α , IL-1 β , IL-4, IL-6, IL-8, IL-10, IL-13, MCP-1, INF- γ and TNF- α , on Sun Radiation-activated hEPC.

Up to 55% of Protection Index in all the analyzed inflammation mediators against Sun radiation*.

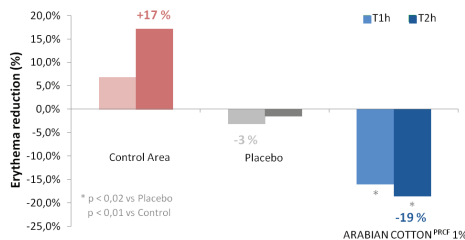
4. Regenerative activity: Induction of the extracellular matrix neo-fibers synthesis (Type I Collagen, Type III Collagen and Elastin).

- *Protection Index: reduction of the parameter levels compared to control (not treated, irradiated).
- *Productive Index: increase in the extracellular matrix protein compared to control (not treated).
- *Sun radiation: irradiation with a solar simulator lamp (SOL500 Dr. Hönle).
- *IR radiation: irradiation with an IR lamp Phillips - Infrared lamp hard glass – BR125 Red (250W, 230V).

Up to 79%, 58% and 64% of Productive Index* in Type III Collagen, Type I Collagen and Elastin, respectively, being in the case of Elastin, higher than TGF- β 1 (47%).

IN VIVO EFFICACY

- 16 Caucasian volunteers.
- 25-60 years old.
- Phototypes I-III (Fitzpatrick) / All Skin types.
- Irradiation UVA+B (2xMED), Mexameter (R).
- 1 single application (back).
- 1% dosage of ARABIAN COTTON^{PRCF}.



ARABIAN COTTON^{PRCF} shows a very effective reduction of erythema in 81% of volunteers.

Up to 44% erythema soothing after 1h.

Up to 52% erythema soothing after 2h.

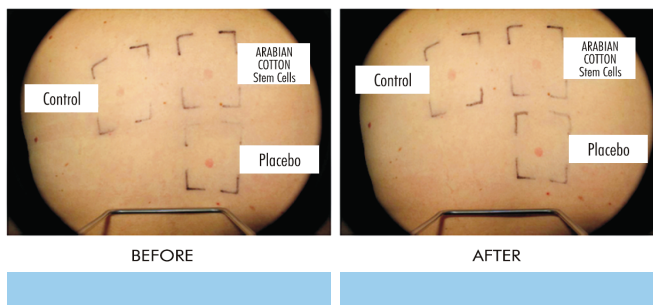
SAFETY PROFILE

In vivo:

- Skin Tolerance (patch test).
- Sensibilization (HRIPIT).
- Phototoxicity.

In vitro:

- Skin irritation potential.
- Ocular irritant potential.
- Mutagenicity.
- Cytotoxicity.



ARABIAN COTTON^{PRCF} accelerates the repair of photo-damage caused by solar radiation on the skin, including inflammation, erythema and DNA damage.