Bright Light Madonna lily

Regulating skin pigmentation

A STORY

The Madonna lily | *lilum candidum, Liliaceae*

A symbol of purity with a universal fragrance

Born in Asia Minor, it is an evergreen plant, with many flowers, that, like other lilies, is very popular in European gardens. Cultivated since Ancient times in Egypt and in Rome, for its exceptional fragrance – a sweet smell stronger in the evening, it has become a main component in many contemporary perfumes. And it has been used also for its many healing properties in all the Mediteranean area. As a plant symbol of purity because of its color, its flowers have been selected since the Ancient Egypt to Renaissance to go with the representations of power, and also in still lifes.

Key points

An active plant cell
Developed to deliver the highest amount of original active molecules

A high tech natural ingredient
Created to preserve and improve the identity and the benefits of a natural product

A brightening action
Increases radiance, decreases spots and improves skin tone

Because of ageing or having been too much exposed to UV, skin tone can become «un-uniform», it is necessary to regulate skin pigmentation at the beginning of its process. To get a skin more radiant, lighter, that looks younger.

BRIGHTENING

PRODUCT BENEFITS

Brightening

Lightening

Helps to prevent and reduce brown spots

Regenerating

Increases epidermis cell regeneration and reinforces the protective skin barrier.

Brightness of complexion

Reduces skin blemishes, helps develop a more uniform complexion

To be used in skincare or make-up products such as cream, fluid, serum, balm, lotion, milk, foundation, concealer, etc. In any cosmetic or skincare product dedicated to even skin tone.

NAOLYS

Related products | INSIDE LIGHT POET'S NARCISSUS | SMOOTH LIGHTENING WHITE ROSE | ENLIGHTENING INDIAN KUDZU

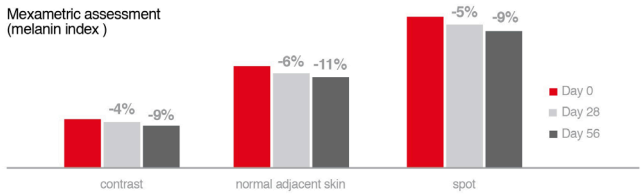
HOW IT WORKS

Bright Light Lys Madonna lily: decreasing melanin in the upper layers of epidermis

Melanocytes, cells from the basal layer, synthetize melanin, that absorbs UV rays. They transfer it to keratinocytes through melanosomes, organites, that fill up with melanin developing. The synthesis of melanin like the transfer of melanosomes to keratinocytes are complex phenomenae, dependent on the action of many molecules, hormons and cytokines. Bright Light Madonna lily interferes on the transfer of melanin from melanocytes to keratinocytes by limiting the action of the PAR-2 (protease-activated receptor-2) activated by a protease enzyme, that makes absorption of melanosomes by keratinocytes easier. Therefore the quantity of melanin decreases in keratinocytes. In the same time, it boostes cell renewal to get a better cell balance and to force out faster melanin in the epidermis.
Thanks to those related actions, melanocytes and keratinocytes play again their original part in protecting skin.

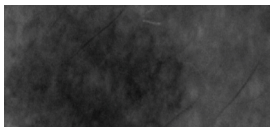
Clinical testing results

Lightening of face skin

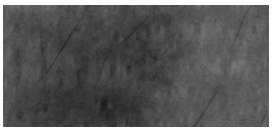


Study results

- Decrease of contrast by 9%
- Decrease of normal adjacent skin by 11%
- Decrease of brown spots by 9%



Day 0



Day 56

Study conditions
Testing made on 30 women (35-65 years old) with spot on their face, during 56 days.
Mexametric measurement after 56 +/- 2 days, application of the product on the face twice a day. Measurement of melanin index with Mexameter.
Emulsion with 0.1% of Bright Light Madonna lily (powder)

Technical information to formulate Bright Light Madonna lily

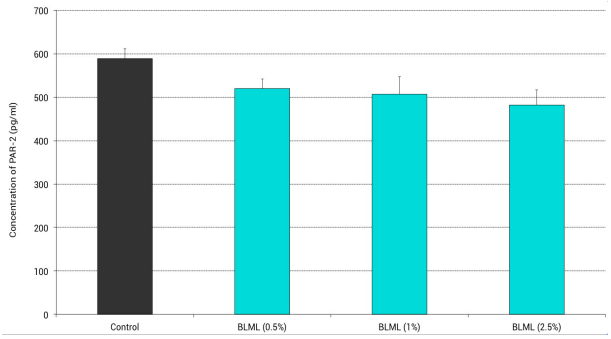
INCI name of cells	**form**	**aspect**	**minimum concentration**	**dispersible**
lilium candidum leaf cell extract	cells (20%) in glycerin or sunflower oil (80%)	liquid	starting at 0.5%	in any formulation

Study of melanine transfer

At the epidermis level, pigmentation starts with the synthesis of melanin in melanosomes which are located in melanocytes, followed by melanosomes transfer to surrouding keratinocytes which will later ship pigment and occasionnaly degrade it.
Inside that long processus, Naolys decided to study especially its last steps, melanosomes transfer to keratinocytes. Melanosomes are specific intracellular organites in melanocytes, which synthetize melanin, and their structure is different according to the type of melanine they produce: eumelanosomes associated to the syntheis of eumelanines and phaemelanosomes associated to the synthesis of pheomelanines. They differentiate in 4 steps producing and loading melanine starting at step 3, thanks to 3 key enzymes especially.
During differenciation, melanosomes are transported from perinucleus zone to the extremity of dendrites. When they are at the last step of differenciation, full of melanin, they move to the extremity of dendrites. Then they get into keratinocytes according to a mechanism still unknown, but we know now that many molecules play a part, especially in the mechanism of direct injection, that includes ther receptor called Proteinase Activated Receptor 2, a protein located on keratinocytes.

Indeed the receptor PAR-2 plays an important part in skin pigmentation by increasing the absorption of melanosomes by keratinocyts, but also the secretion of «Prostaglandin E2» PGE2 and of the «Prostaglandin F2-α» PGF (2α) by keratinocyts. PGE2 and PGF (2α) once released, stimulate the formation of melanocyte dendrites through receptors of prostaglandins (EP1, EP3 and FP).

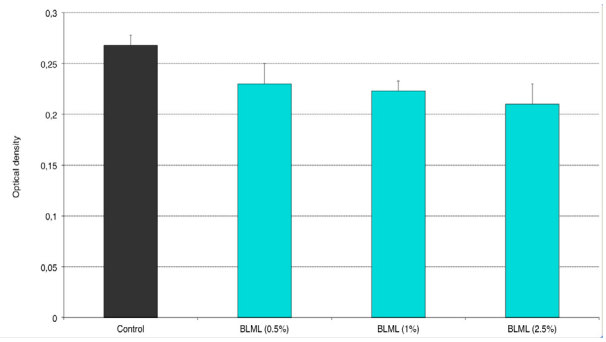
Study of PAR-2 (Proteinase Activated receptor 2)



Decrease of the expression of PAR-2

→ At concentrations of 0.5%, 1% and 2.5%, significant decrease of the expression of PAR-2 (Proteinase-Activated receptor 2) at the level of the co-culture human melanocyts/keratinocyts, respectively by 12%, 14% and 18% after 24 hours of treatment

Study of melanosome transfer



Decrease of melanosome transfer

→ At concentrations of 0.5%, 1% and 2.5%, significant decrease of the transfer of melanosomes in keratinocyts that has been translated by a decrease of melanin respectively by 14%, 17% and 22% after 24 hours of treatment

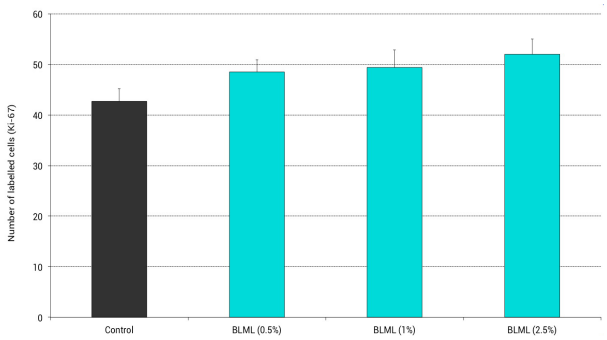
Study of cell renewal - epidermis level

The epidermis, the superfical layer of skin is first made of cells called keratinocytes which renew non stop according to a 21 days cycle That renewal of the epidermis is made thanks to the cell proliferation and the differenciation that keep the balance of adult tissues, therefore keratinocytes, divide at the level of the basal layer of the epidermis, which is mainly made of non differenciated cells and migrate to the surface changing their form: they lose their nuclei and load hard filaments of keratine. When they reach the cornified layer, they become corneocytes, dead cells that create a solid membran (thanks to keratine) impermeable and protective: the protective natural barrier of the epidermis. Those built up corneocytes will naturally break away and be shed. The alteration of that balance, essential to the good of tissues called homeostasis is responsible for physical changings linked to ageing: skin wilting because of the decrease of cell proliferation, lack of healing in case of wounds, loss of hair...

Study of the proliferation of epidermis cells

KI67 is a anti-gene to mark cell proliferation.

Study of epidermis cell proliferation



Increase of KI 67

→ At concentrations of 0.5%, 1% and 2.5%, stimulation of the proliferation of keratinocytes in the basal layer for treated epidermis respectively by 14%, 16% and 22%