Octadecenedioic Acid

Function:
Helps dark skin and Asian skin to achieve a fairer and even skin tone.

Definition:
Highly purified octadecenedioic acid molecule obtained by an ECO-DESIGNED process from sunflower seed oil.

Properties:
Brightens the entire skin surface of dark skin.
Lightens the hyperpigmented areas of Asian skin.

Characteristics:
From the nucleus to the melanocyte environment, MEDIATONE™ controls the genetic pigmentation and the melanin transfer to the keratinocytes.

Points of interest:
By reducing stress-induced pigmentation and by regulating the epidermal maturation, MEDIATONE™ contributes to lessening skin pigmentation disorders.

INCI name:
Octadecenedioic Acid

Applications:
Skin brightening products.

Formulation:
Oil soluble.
Melt to 85°C into the oil phase.

Recommended use level:
2.5% to 4%

Patents:
FR 3 024 037 - WO 2016/013973

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DUAL MELANOGENETIC CONTROL

On dark skin

L* ...... +1.73 units
ITA° ........ +6.11°

On Asian skin

L* ...... +1.26 units
ITA° ......... +3.13°

Brightening - TA°

-23° -17°
T4 weeks
T0

-17° 21°
T3 weeks
T0

After 4 weeks © After 3 weeks

Hyperpigmented areas - L*

On dark skin

On Asian skin
**MEDIATONE™** neutralises stress-induced pigmentation and regulates epidermal maturation in order to limit skin pigmentation disorders.

**CONTACT INFORMATION**

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**in vivo**

By the regulation of genetic pigmentation and by the control of the melanin pathway through the epidermis, MEDIATONE™ acts as a skin tone mediator.

**From the melanocyte nucleus...**

The strong affinity for the protein complex PPARγ contributes to reducing the production of tyrosinase and melanin.

**REGULATION OF THE GENETIC PIGMENTATION**

**To the melanocyte environment...**

**CONTROL OF MELANOSOME TRANSFER**

- **MEDIATONE™** 30 ppm* on UVB-stressed human keratinocytes
- **MEDIATONE™** 4% in a cream on skin explants
- **MEDIATONE™** 20 ppm* on UVB-stressed human keratinocytes

- Endothelin-1 -57%, p<0.01 vs. UVB-stressed control
- Keratinocyte Growth Factor Receptor -40%, p<0.01 vs. placebo
- Quantity of phagocytosed microbeads -59%, p<0.01 vs. UVB-stressed control

**Up to the upper layer of the skin...**

**CONTROL OF STRESS-INDUCED PIGMENTATION**

- Oxidative stress
- Inflammation

**MEDIATONE™** 100 ppm* on human melanocytes stressed by H₂O₂

- **MEDIATONE™** 30 ppm* on UVB-stressed human keratinocytes
- PGE2 -69%, p<0.01 vs. UVB-stressed control

**REGULATION OF KERATINOCYTE MATURATION**

**MEDIATONE™** 20 ppm* on human keratinocytes

- Involucrin +841%, p<0.01
- Loricrin +385%, p<0.01
- Ceramides +778%, p<0.01
- Hyaluronic acid +72%, p<0.01

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**in vitro**

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**CLAIM SUBSTANTIATION**

**Ceramides................. +778%, p<0.01**
**Hyaluronic acid ... +72%, p<0.01**
**Involucrin ............... +841%, p<0.01**

**by reproduction of results...**

**COLORIMETRIC ANALYSIS ON THE FACE - 4 weeks and 8 weeks**

**T0**

**T8 weeks**

**High depigmentation effectiveness for a fairer complexion.**

**COLORIMETRIC ANALYSIS ON THE HYPERPIGMENTED AREAS - 3 weeks**

**T0**

**T3 weeks**

**Lightening of dark spots for a more even skin tone.**

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**23 volunteers (mean age 32) with dark skin (Fitzpatrick skin type V-VI) applied twice daily for 4 weeks (up to 8 weeks) a cream containing 4% **MEDIATONE™** on the half face against placebo. Study performed in Canada: Dec-13 to Feb-14.**

**25 volunteers (mean age 47) with Asian skin (Fitzpatrick skin type IV-V) and visible dark spots applied twice daily for 3 weeks a cream containing 2.5% **MEDIATONE™** on the half face against placebo. Study performed in Thailand: Jan-15 to Feb-15.**