



# MEDIATONE™



Octadecenedioic Acid

A highly purified skin tone mediator

**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 3024 037 - WO 2016/013973



## DUAL MELANOGENETIC CONTROL

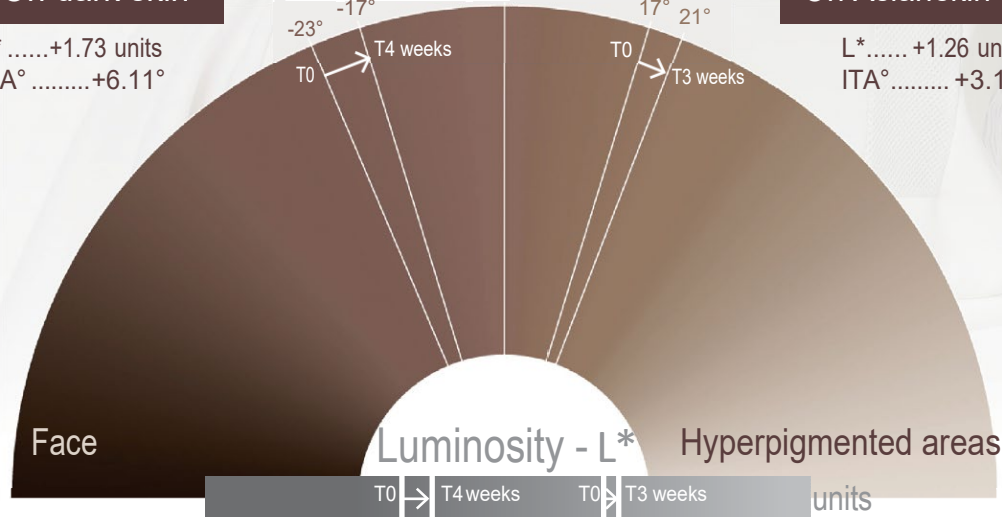
On dark skin<sup>(1)</sup>

Brightening - I TA° d rees

On Asian skin<sup>(2)</sup>

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

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



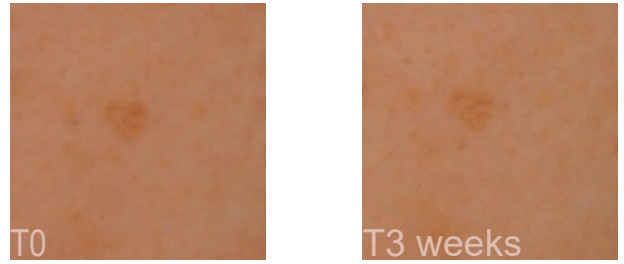
<sup>(1)</sup> After 4 weeks <sup>(2)</sup> After 3 weeks

## in vivo performed on 2 panels

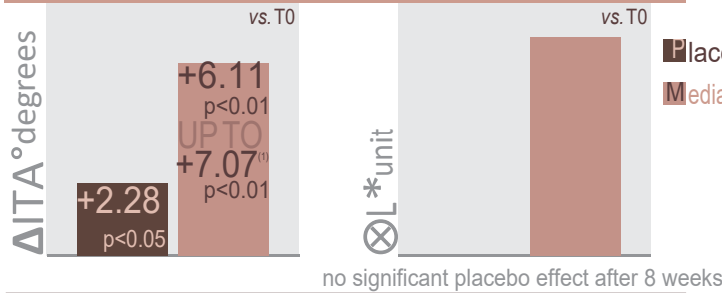
23 volunteers (mean age 32) with dark skin (Fitzpatrick skin type V-VI) applied twice daily for 4 weeks (up to 8 weeks) a cream containing 4% MEDIATONE™ on the half face against placebo. Study performed in Canada: Dec-13 to Feb-14.

## Brightening action

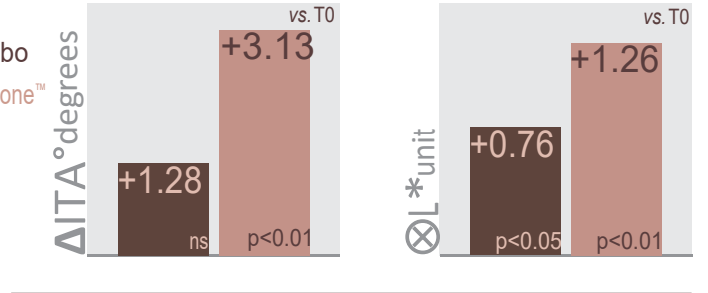
25 volunteers (mean age 47) with Asian skin (Fitzpatrick skin type IV-V) and visible dark spots applied twice daily for 3 weeks a cream containing 2.5% MEDIATONE™ on the half face against placebo. Study performed in Thailand: Jan-15 to Feb-15.



COLORIMETRIC ANALYSIS ON THE FACE - 4 weeks and 8 weeks<sup>(1)</sup>



COLORIMETRIC ANALYSIS ON THE HYPERPIGMENTED AREAS - 3 weeks



High depigmentation effectiveness for a fairer complexion.

Lightening of dark spots for a more even skin tone.

## in vitro

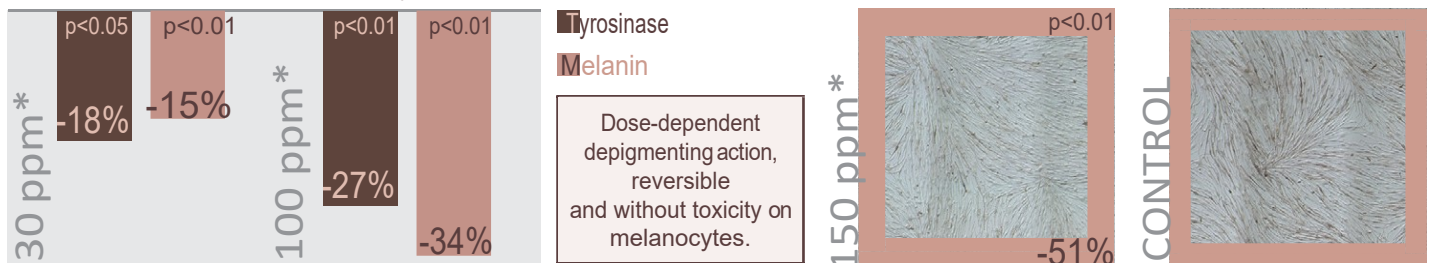
By the regulation of genetic pigmentation and by the control of the melanin pathway through the epidermis, MEDIATONE™ acts as a skin tone mediator.

### From the melanocyte nucleus...

### REGULATION OF THE GENETIC PIGMENTATION

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

MEDIATONE™ on human melanocytes vs control



### To the melanocyte environment...

### CONTROL OF MELANOSOME TRANSFER

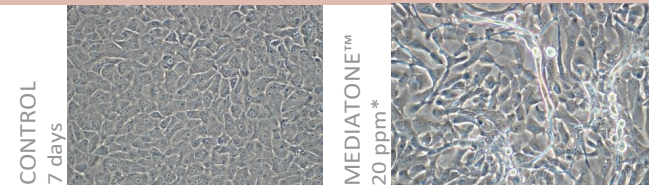
Target	MEDIATONE™ Effect
Mediator of melanocyte dendricity	MEDIATONE™ 30 ppm* on UVB-stressed human keratinocytes: Endothelin-1 ... -57%, p<0.01 vs. UVB-stressed control
Phagocytic receptor	MEDIATONE™ 4% in a cream on skin explants: Keratinocyte Growth Factor Receptor ... -40%, p<0.01 vs. placebo
Phagocytic uptake	MEDIATONE™ 20 ppm* on UVB-stressed human keratinocytes: 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	MEDIATONE™ 100 ppm* on human melanocytes stressed by H <sub>2</sub> O <sub>2</sub> : ROS ..... -57%, p<0.01 vs. H <sub>2</sub> O <sub>2</sub> -stressed control
Inflammation	MEDIATONE™ 30 ppm* on UVB-stressed human keratinocytes: PGE2 ..... -69%, p<0.01 vs. UVB-stressed control

#### REGULATION OF KERATINOCYTE MATURATION



#### EXPRESSION OF MATURATION MARKERS

Marker	20 ppm* on human keratinocytes	30 ppm*
Involucrin	+841%, p<0.01	
Loricrin	+385%, p<0.01	
Ceramides	+778%, p<0.01	
		Hyaluronic acid ... +72%, p<0.01

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

\* 100 ppm = MEDIATONE™ eq. 0.01%