Body Face Make-up

Patent N° FR 0210810

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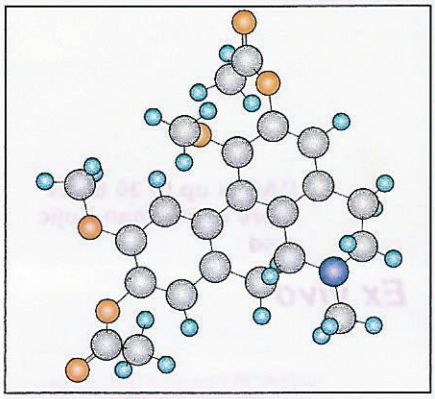

Diacetyl boldine

Function:
Skin lightening

Definition:
Diacetyl Boldine (DAB)
In C_8 C_{10} triglycerides

Properties:
Diacetyl Boldine (DAB) works via α-adrenergic antagonist receptors and calcium flow regulation

Point of interest:
Tyrosinase is not directly inhibited by competition, tyrosinase is stabilised in its inactive form

INCI name:
Caprylic/Capric Triglyceride
- Diacetyl Boldine

Applications:
Emulsions, soaps, make-up products with lightening or whitening properties

Formulation:
Oil soluble

Recommended use level:
4%

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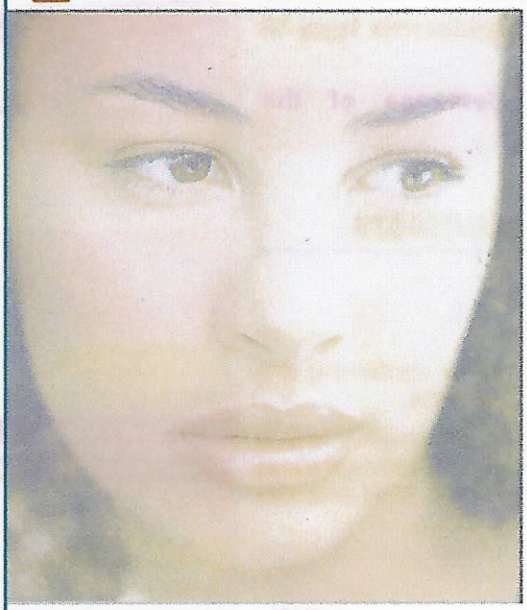

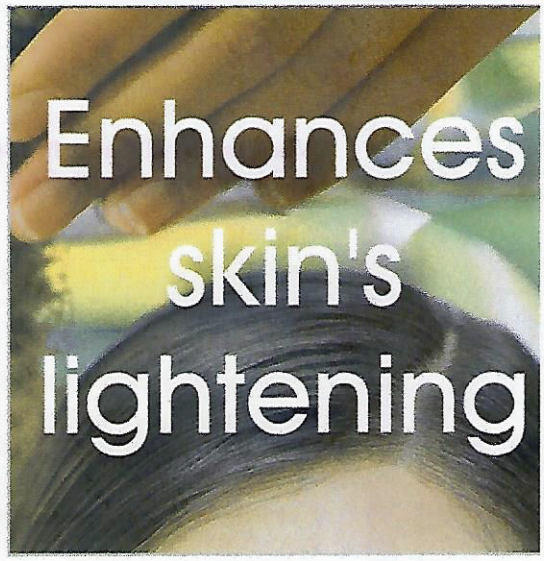

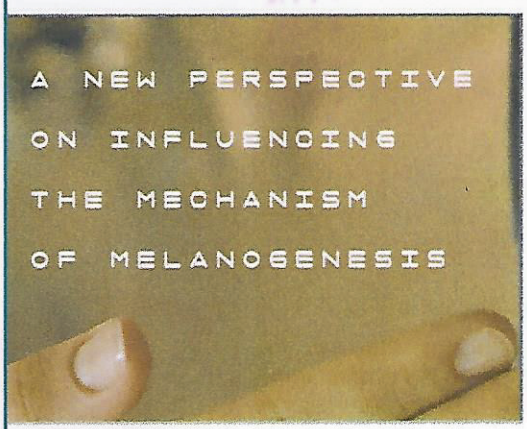

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CLAIM SUBSTANTIATION

In vitro tests

- **Test on melanocyte B16 lines**
  with 4% Lumiskin™

Inhibition of tyrosinase activity:	53%
Decrease in melanin quantity:	70%

- **Test on human melanocytes**
  with 4% Lumiskin™

Decrease in melanin synthesis:	51%

Ex vivo test

- **Skin Ethic® 3D model of epidermis type VI**
  with 4% Lumiskin™

Visible and significant decrease of the epidermic pigmentation

In vitro

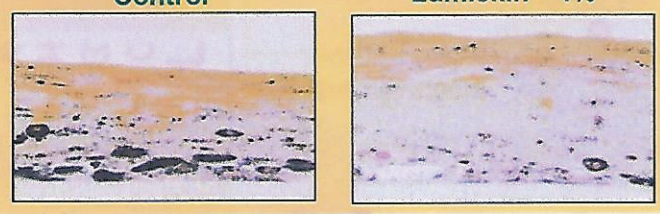
Effect on melanin production

DAB Control Kojic acid

The efficacy of DAB (Diacetyl Boldine) on melanogenesis is visible to the naked eye

DAB is up to 30 times more active than Kojic acid

Ex vivo



In vivo tests on Asian volunteers

- **Colorimetric test**

Study on 20 Asian volunteers.

Twice daily application of a cream containing 4% Lumiskin™ (40 ppm DAB) for 2 months.

Measurement of **ITA°** (clarity) by chromameter and **Melanin Index** by mexameter on one homogeneous area (two sites), one hyperpigmented area and one untreated zone (chin)

- **Self-Evaluation**

Lightening of the skin	+ 71%
Lessening of the hyperpigmented areas	+ 54%
Complexion more even	+ 65%
Skin more radiant	+ 74%

In vivo

Colorimetric test

Melanin index — zones	Normal	Hyper-pigmentation	Control
Variation (D56-D0)	-17(1)	-20(1)	-6(ns)
Maximum variation	-25%	-18%	ns
Volunteers with improvement	85%	90%	50%

ITA° (clarity) — zones	Normal	Hyper-pigmentation	Control
Variation (D56-D0)	+2°(3)	+2.9°(2)	+1.2°(ns)
Maximum variation	+11.2°	+9.6°	ns
Volunteers with improvement	65%	80%	50%

(1) highly significant/D0: p<<0.01 ; **(2)** significant/D0: p<0.01 ; **(3)** significant/D0: p<0.05 ; **ns:** non significant

In vivo tests on age spots

- **Colorimetric test**

Test on 22 caucasian volunteers aged 58 +/- 7.8.

Twice daily application of a cream containing 4% Lumiskin™ (40 ppm DAB) for 2 months (between October and December) on one hand versus the other hand.

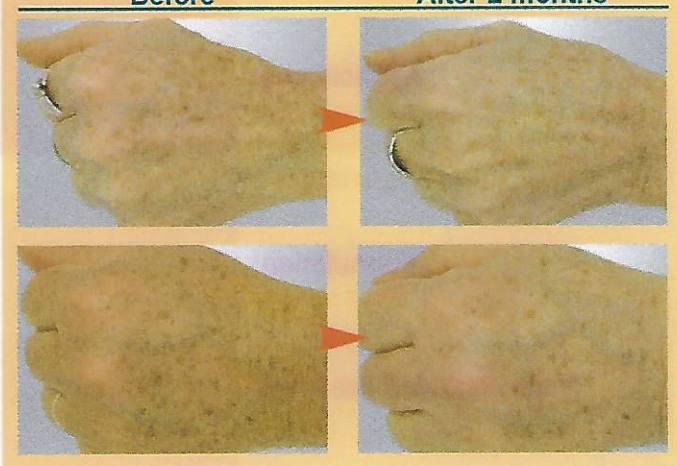
Measurement of **Melanin Index** by mexameter on 4 sites.

Melanin index	Treated hand	Control hand
Variation (D56-D0)	- 40	- 25
Variation (%) (Control J56/Treated J56)	23.4%*	

* significant/Control : P<0,05

In vivo

Colorimetric test



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