

## 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**




The efficacy of DAB (Diacyetyl Boldine) on melanogenesis is visible to the naked eye  
**DAB is up to 30 times more active than Kojic acid**

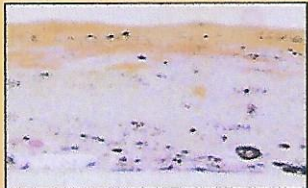
DAB      Control      Kojic acid

**Ex vivo**

**Control**



**Lumiskin™ 4%**



## 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 <sup>(1)</sup>	-20 <sup>(1)</sup>	-6 <sup>(ns)</sup>
Maximum variation		-25%	-18%	ns
Volunteers with improvement		85%	90%	50%

ITA° (clarity)	zones	Normal	Hyper-pigmentation	Control
Variation (D56-D0)		+2° <sup>(3)</sup>	+2.9° <sup>(2)</sup>	+1.2° <sup>(ns)</sup>
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**

**Before**

**After 2 months**

