



REVINAGE

The Real Retinoid-like

REVINAGE

Retinoids receptors expressed *in vitro* and *ex vivo*

- Retinoid-like from vegetable source with extra benefits
- Ultimate anti-ageing
- Antiinflammatory and anti-oxidant
- Lightening effect
- Cell renewing; balance of the replication proteins



An ECOCERT validated product

REVINAGE Scientific Awards

1st place in COLAMIQC XX - Latin American and Iberian Congress of Cosmetic Chemists, Venezuela - 2011

1st place in 24th Brazilian Congress of Cosmetology (FCE) - 2010



CHEMYUNION

REVINAGE

“Retinoid-like” Concept

Retinoids are known for their ability to smooth and plump wrinkles from inside out the skin, stimulating collagen synthesis and bringing rejuvenation and elasticity back to skin.

Retinoids disadvantage

Many patients undergoing topical retinoid therapy experience showed retinoid dermatitis, that could lead to an inflammatory process.

Cosmetic Benefits

REVINAGE is a real unique RETINOID-LIKE from vegetable source that can substitute Retinol and its derivatives with many advantages.

REVINAGE presents non mutagenic, non phototoxic effects, good skin compatibility and no allergic potential (*in vitro* and Clinical safety tests).

Retinoids effects

Positive:

- ↑ Pro-collagen
- ↑ Superoxide Dismutase
- ↑ Catalase
- ↑ Growth Factors (TGF- β , EGF and FGF)

Negative:

- Long term immunological and inflammatory response
- Oncogenesis expression (VEGF, MMPs)
- Intrinsic and UV ageing



Sustainable harvest of *Bidens Pilosa L.*

Cutting edge technology:

Supercritical fluid apolar extract of Hairy Beggarticks (*Bidens pilosa*) in vegetable excipient standardized in Phytol

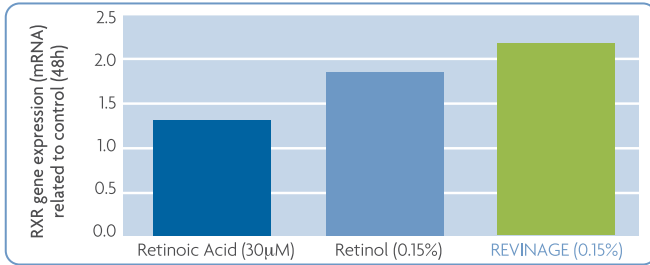


Efficacy tests

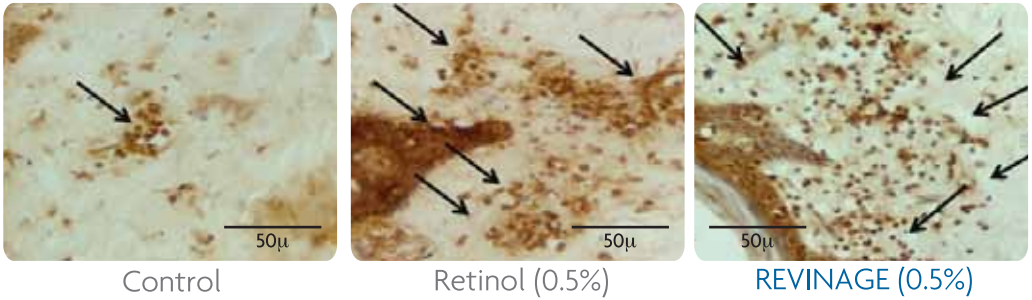
1 - Retinoid-like activity

Retinoids and retinoid analogues exert their activities by interacting with nuclear receptors RXRs (retinoid receptors) on cells. (Michel, Jombard & Démarchez, 1998).

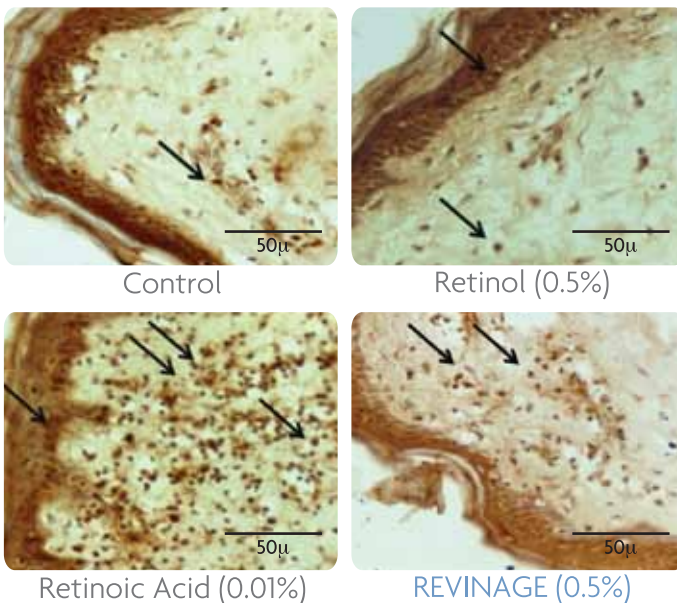
REVINAGE increases in **2.18 fold** the RXR gene expression



Immunohistochemical Analysis - RXR (48h)



Immunohistochemical Analysis - RAR (48 h)



Retinoids can regulate gene expression by inhibiting the activity of other transcription factors, such as **activating protein-1 (AP-1)** that may play a substantial role in the inflammation and immune response (Michel et al., 1998).

REVINAGE decreases in **34%** the AP-1 activity

2 - Anti-ageing effect

In vitro Tests

1. Effects in the extra-cellular dermal matrix

REVINAGE increases:

- Collagen I in **24%**
- Functional Elastin in **42%**
- Pro collagen gene expression in **2.59 fold**
- TGF-beta stimulation in **41%**
- EGF receptor gene expression in **2.1 fold**

REVINAGE decreases:

- MMP-1 synthesis in **34%**

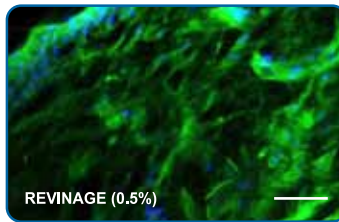
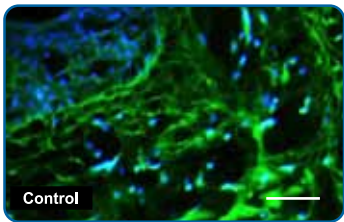
2. Effects in cell longevity

REVINAGE increases:

- Sirtuin-6 gene expression in **2.4 fold**

Ex vivo Tests

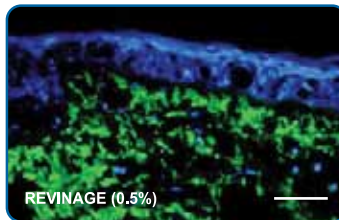
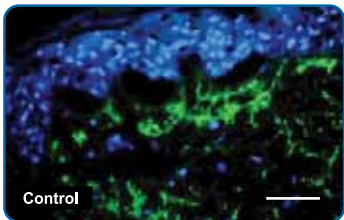
Skin fragments of eye plastic surgery using 0,5% of REVINAGE in a formula



DNA

Collagen

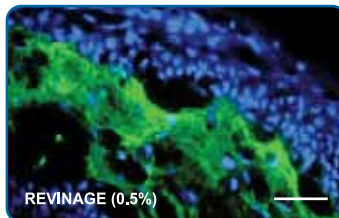
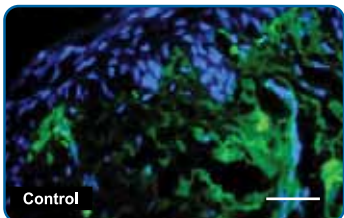
50µm



DNA

Elastin

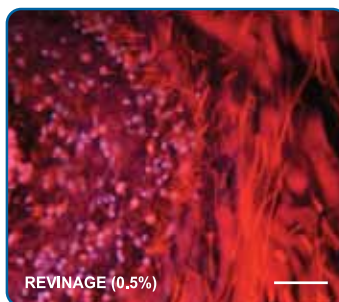
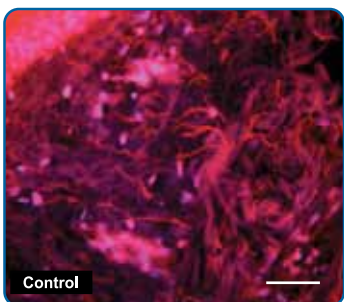
50µm



DNA

GAGs

50µm



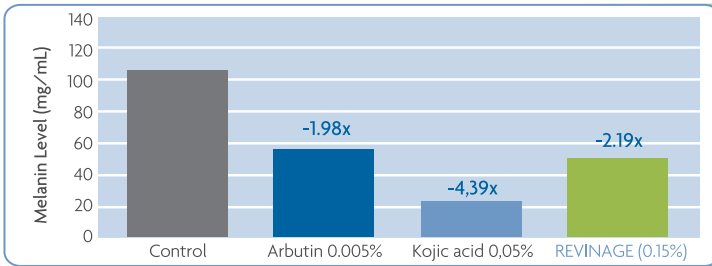
DNA

Extra cellular
matrix
condition

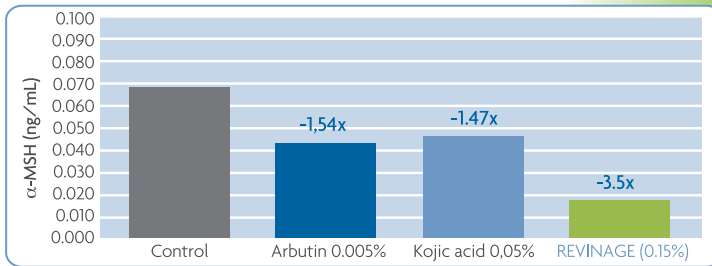
50µm

3 - Lightening effect

Melanin reduction

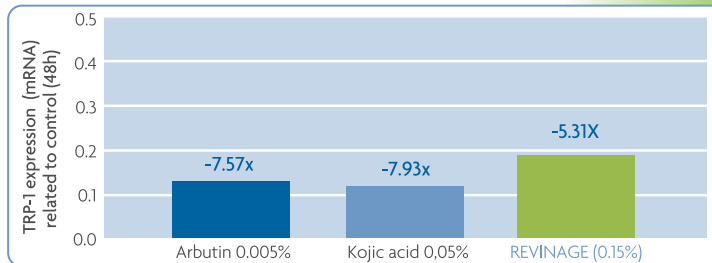


α -MSH (Alpha-melanocyte stimulating hormone) inhibition



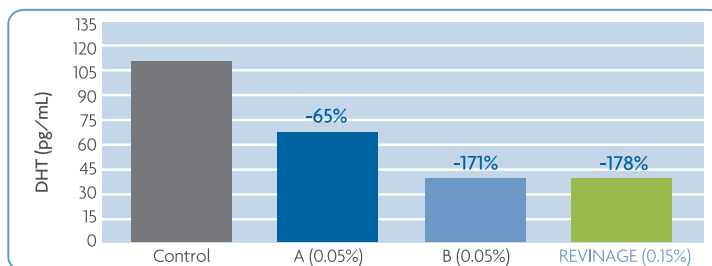
REVINAGE:
better efficacy
compared to
standard actives
(arbutin and
kojic acid)

TYRP-1 (Tyrosinase - related Protein 1) inhibition



4 - Oil control: Anti-acne effect

Dihydrostestosterone (DHT) reduction



REVINAGE:
better efficacy
compared to
benchmark
actives (A and B)

A = Water (and) Butylene Glycol (and) Spiraea Ulmaria Extract
B = Serenoa Serrulata Fruit Extract

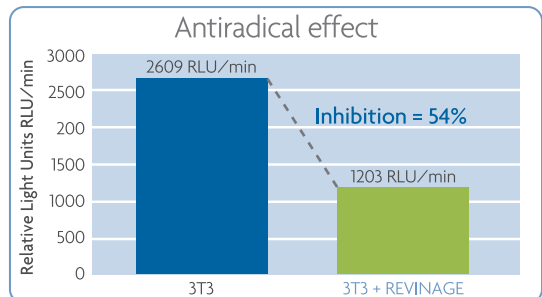
5 - Antiinflammatory / Anti-oxidant effects

NF- κ B (nuclear factor Kappa-light-chain-enhancer of activated B cells) is a protein complex activated by inflammatory cytokines, leading to skin ageing

Tested Product	NF- κ B gene expression Number of times related to control
REVINAGE (0.15%)	-1,55
Retinoic Acid 30 μ M	23,7
Retinol (0.15%)	23,6

REVINAGE effects in oxidative stress parameters

- Superoxide dismutase (SOD): \uparrow 189 %
- Catalase (CAT): \uparrow 70 %
- Malonaldehyde (MDA): \downarrow 3.6 fold



REVINAGE also inhibits inflammatory mediators:

- Cyclooxygenase-2 (COX-2): \downarrow 58%
- Prostaglandine E₂ (PGE₂): \downarrow 26%
- Leucotriene B₄ (LTB₄): \downarrow 28%

All *in vitro* tests were performed with REVINAGE at 0,15% using human fibroblasts or keratinocytes 24 or 48 hours of incubation. All parameters were evaluated versus basal condition.

Clinical Tests

Emulsion with **REVINAGE** 3% vs. Placebo Emulsion in the forearm, single application
 Evaluated after: 30min, 1h, 2h, 4h, 18h, 24h
 Standard: Phytol (Sigma, W502200, >97% purity)

Skin Permeation

Raman Spectroscopy (River Diagnostics, Model 3510)
 State of Art Methodology for Skin Permeation in Real Time

	% Active permeation 1-60 μ M related to Phytol					
	30min	1h	2h	4h	18h	24h
Emulsion	0%	0%	0%	0%	0%	0%
Emulsion + REVINAGE	8.12%	29.3%	62.17%	65.15%	9.13%	2.21%

Emulsion with **REVINAGE** at 2% vs. emulsion with retinyl palmitate at 0,3% (positive control) and basal condition
 40 healthy female volunteers
 35-55 years old
 Forearms and face, twice a day

1- Instrumental Evaluation of Surface Roughness of Skin and Wrinkles using PRIMOS®

REVINAGE vs Basal Condition

- decreased skin rugosity in 35,59%.(D42 - face)
- decreased the deepest wrinkle in 28,17% (D42 – face)

REVINAGE vs. Retinyl Palmitate

- similar results without statistic significance

2 - Instrumental Evaluation of Skin Elasticity using CUTOMETER SEM 575

REVINAGE vs Basal Condition

- improved the skin elasticity in 12,99% (D42– face)

REVINAGE vs. Retinyl Palmitate

- similar results without statistic significance

3 - Instrumental Evaluation of UV Spots using VISIA®

REVINAGE vs Basal Condition

- decreased strongly the UV spots: 36,82% (D42 – face)

REVINAGE vs. Retinyl Palmitate

- similar results without statistic significance

4 - Instrumental Evaluation of Skin densification using DUB®-USB

REVINAGE vs Basal Condition

- increased skin density in 25,08% (D42 – face)

REVINAGE vs. Retinyl Palmitate

- similar results without statistic significance

REVINAGE Benefits:

- **REVINAGE** helps to fight against early wrinkles and smooths deep wrinkles
- **REVINAGE** improves the skin radiance and texture
- **REVINAGE** restores firmness in mature skin

Suggested Concentration: From 1,0 to 3,0%

PATENT PENDING

INCI name:	CAS NUMBER	EINECS(I)/ELINCS(L)
Bidens Pilosa Extract	1118558-33-0	-
Elaeis Guineensis (Palm) Oil	8002-75-3	232-316-1 (I)
Gossypium Herbaceum (Cotton) Seed Oil	8001-29-4	232-280-7 (I)
Linum Usitatissimum (Linseed) Seed Oil	8001-26-1	232-278-6 (I)



Our philosophy is to practice the 3R's concepts to take care of humanity, environment and scientific progress.

Chinese Approved



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