

ACNILYS®

OILY SKIN REGULATOR



BALANCE

ACNILYS®

PHYTOBIOACTIVE

Problem skins gather oily, acne-prone and imperfection-prone skins. In the 12-24 age group, up to 85% of the population is affected. In addition of this teenager issue, adult skin also suffers more and more from these imperfections caused by hormones, but also by pollution, stress or nutrition: excess and oxidation of sebum, multiplication of *Propionibacterium (cutibacterium) acnes*, hyperkeratinization and inflammation give to the skin a shiny appearance, a thick grain, a complexion blurred by redness and marks... The face loses clearness, freshness and the psychological feeling can be impacted in accentuated cases. Moreover these components are linked and acne phenomenon behaves like a vicious circle, each component increasing the other one.

It is therefore a chronic and multifactorial pathophysiology requiring a complete action on all identified targets to achieve the balance of healthy and clear skin.

> ACTIONS

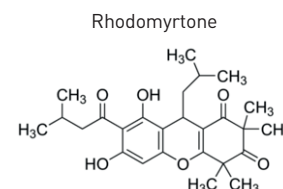
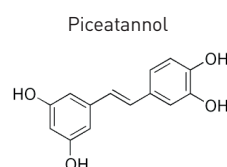
- Prevents hyperseborrhea
- Limits *P. acnes* proliferation
- Reduces inflammation
- Promotes moisturization and radiance

> EFFICACY ORIGIN

Based on a bibliographic selection of plant extracts, a biological screening on specific targets allowed GREENTECH Research to identify the berries of *Rhodomyrtus tomentosa*.

This plant presents potent anti-inflammatory, antioxidant and anti-microbial properties due to its content in:

- Acylphloroglucinols (rhodomyrtone and derivatives)
- Polyphenols (piceatannol and derivatives)
- Organic acids



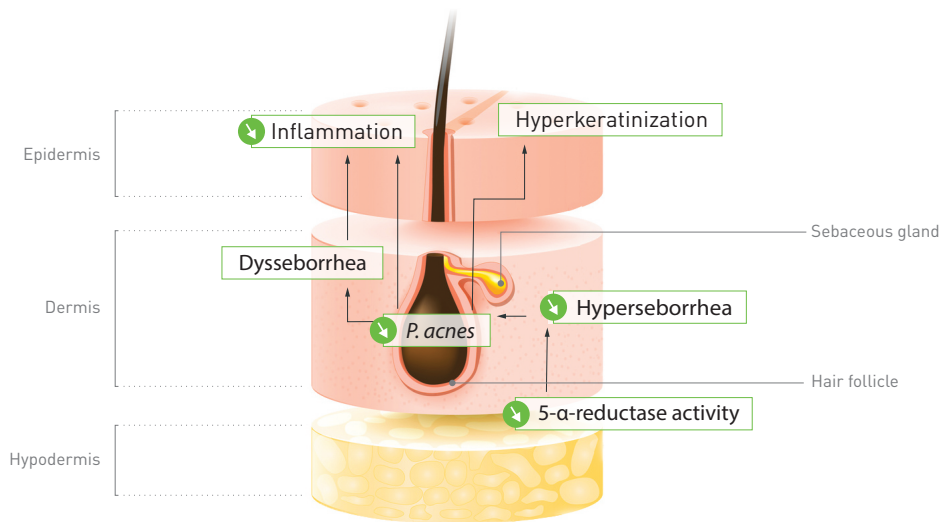
> COSMETIC BENEFITS

The skin is less oily and shiny, the pores are refined and tightened; better moisturized the skin regains radiance and freshness. Skin imperfections, pimples and redness ease, the complexion becomes smooth again.

> COSMETIC USES

- ▶ Oily and combined skin care
- ▶ Corrective products
- ▶ Make-up removers and cleansers
- ▶ Mattifying care
- ▶ Sensitive and reactive skin formulas
- ▶ Oily hair care

ACNILYS® is a multifunctional active that acts on pathways involved in oily skin disorders and especially acne.

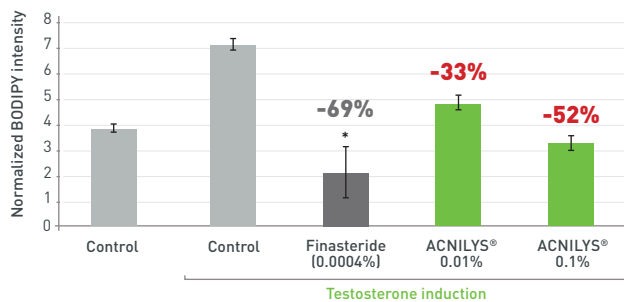


PROVEN EFFICACY

IN VITRO TESTS

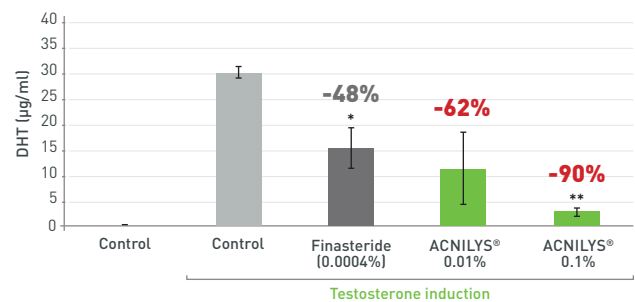
① ACNILYS® prevents hyperseborrhea

1.1 ACNILYS® REGULATES SEBUM PRODUCTION



On PCI-Sebocytes derived from human iPSC (induced pluripotent stem cells) (n=3), lipidogenesis induced at D7 by testosterone (10µM). Multiple treatment with ACNILYS® at D7, D8 and D9 and lipid quantification (BODIPY) at D11. * p<0.05.

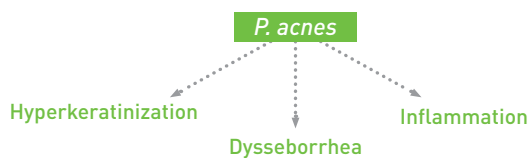
1.2 ACNILYS® INHIBITS 5-α-REDUCTASE ACTIVITY



On PCI-Sebocytes derived from human iPSC (induced pluripotent stem cells) (n=3), lipidogenesis induced at D7 by testosterone (10µM). Multiple treatment with ACNILYS® at D7, D8 and D9 and DHT quantification (ELISA) at D11. *p<0.05, ** p<0.01.

ACNILYS® thus protects from overproduction of sebum, responsible for oily skin appearance.

② ACNILYS® limits *P. acnes* proliferation

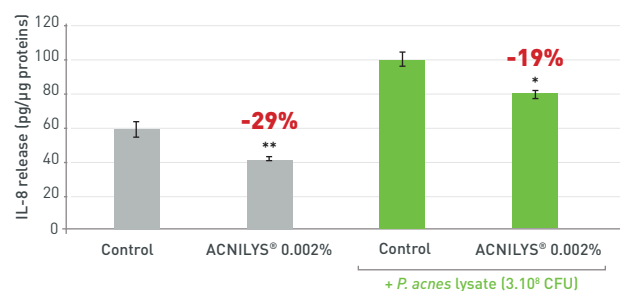


ACNILYS® 0.25 %	-30%
ACNILYS® 0.50 %	-65%*
ACNILYS® 1.00 %	-90%*
IC50	0.40%

On 10⁵ CFU/mL *P. acnes* culture (n=2), evaluation of proliferation (DO) after 48h of treatment with ACNILYS®. *p<0.05. *Propionibacterium acnes* subsp. *acnes* (Phylotypes IA1) isolated from acne lesion in human facial skin

③ ACNILYS® reduces inflammation

3.1 ACNILYS® PROTECTS FROM *P. ACNES* INDUCED IL-8 RELEASE



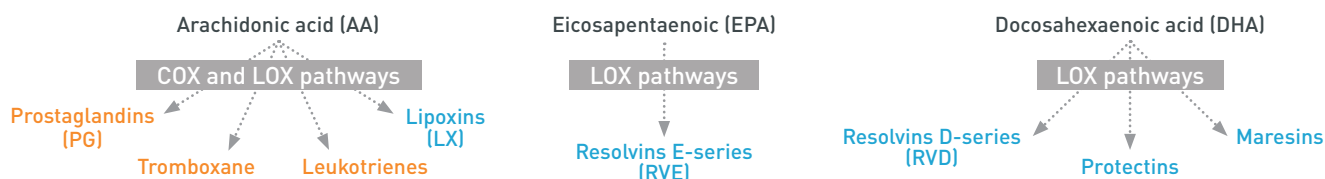
On Normal Human Epidermal Keratinocytes exposed to *P. acnes* lysate (n=3). 24h pre-treatment with ACNILYS® 0.002% + 24h co-treatment ACNILYS® 0.002% and *P. acnes* lysate (3.10⁵ CFU). *p<0.05, **p<0.01

ACNILYS® diminishes *P. acnes* proliferation, limiting its deleterious effects, including inflammation.

③ ACNILYS® reduces inflammation

3.2 ACNILYS® LIMITS THE PRODUCTION OF LIPIDIC MEDIATORS OF INFLAMMATION INDUCED BY OXIDIZED SQUALENE

Inflammation is part of the complex biological response of body tissues to harmful stimuli and presents as heat, pain, redness... Inflammation can be classified as either acute or chronic: acute inflammation is the initial response and chronic inflammation corresponds to a prolonged inflammation. This protective response involves immune cells and molecular mediators including lipidic mediators.



MEASUREMENT OF LIPID MEDIATORS

Precursor	Lipid mediator	Oxidized squalene [% of induction vs control]	Oxidized squalene + ACNILYS® 0.1% [% of protection vs O-SQ]
AA	PGE2	+59%*	-71%***
	LXA4	+424%*	-93%**
DHA	RVD2	+122%***	-45%**
	RVD5	+124%**	-67%***
EPA	RVE2	+32%*	-24%*

On co-cultured dendritic cells and normal human epidermal keratinocytes (n=3), with PUFA precursor complementation. 24h pre-treatment with ACNILYS® 0.1% + 3h co-treatment ACNILYS® 0.1% and oxidized squalene [O-SQ]. Analysis of lipid mediators by HPLC-MS/MS. *p<0.05, **p<0.01, ***p<0.001.

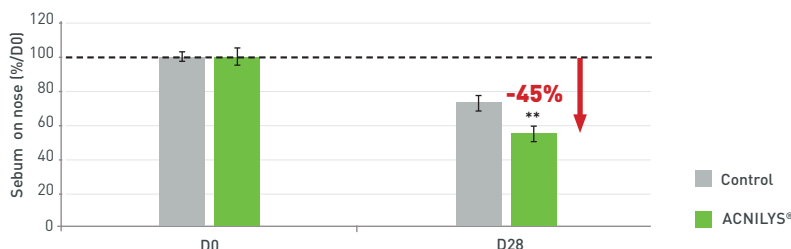
ACNILYS® prevents from inflammation induced by dysseborrhea.

CLINICAL STUDY

IN VIVO
TESTS

• ACNILYS® ACTS ON SEBUM PRODUCTION

Double blind test with 22 female and 20 male (18-35 years-old), with oily skin and minimum 5 inflammatory lesions. Twice daily application during 28 days of ACNILYS® 2% versus placebo (Two groups of 21 volunteers).



Mean±SEM. Δ% D0 vs D28. ** p < 0.01 vs placebo

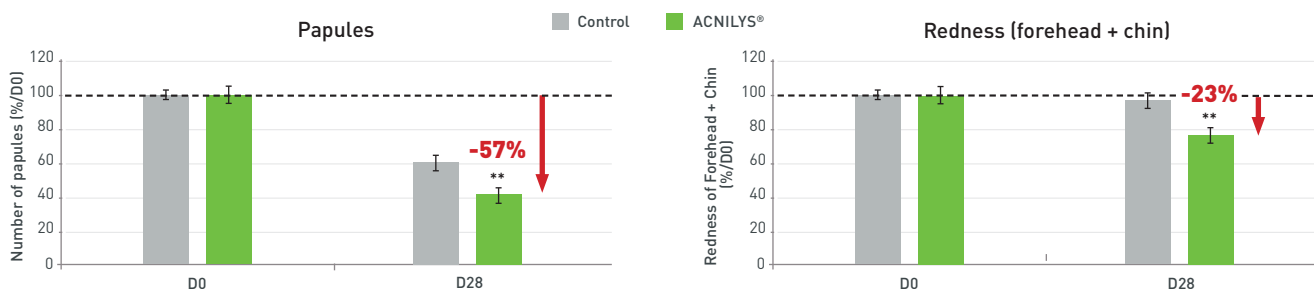
Oily skin appearance (Clinical scoring)

ACNILYS® **-69%*****

Δ% D0 vs D28. *** p < 0.001 vs placebo

ACNILYS® significantly reduces the skin sebum and improves the oily skin appearance.

• ACNILYS® DECREASES INFLAMMATION

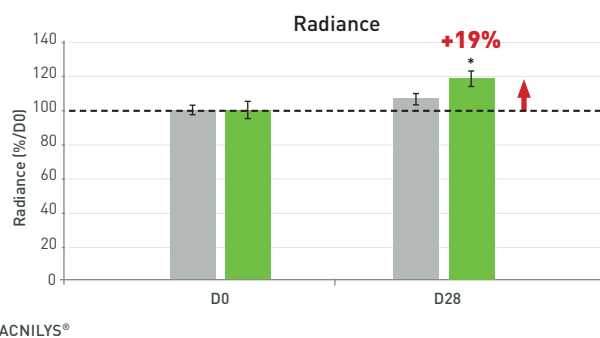
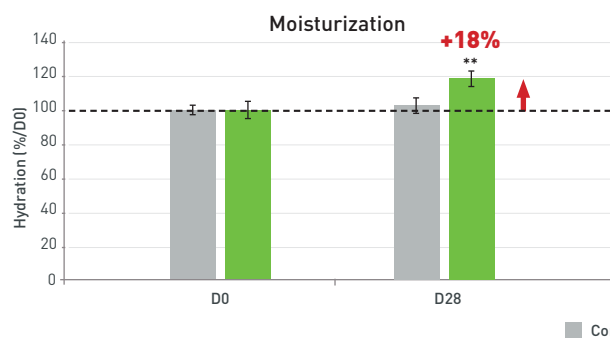


Mean±SEM. Δ% D0 vs D28. ** p < 0.01 vs placebo

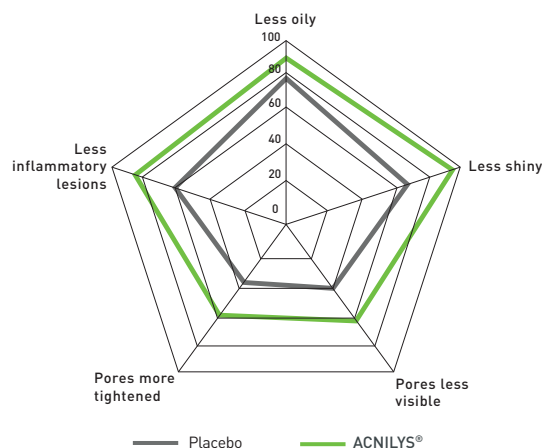
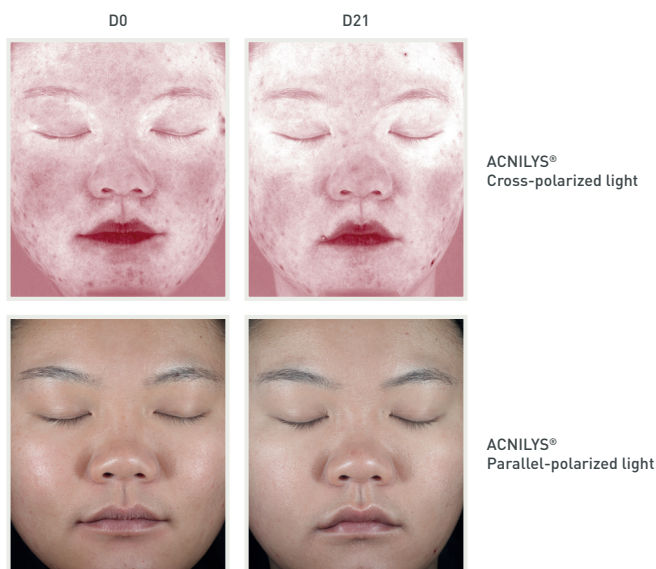
Mean±SEM. Δ% D0 vs D28. ** p < 0.01 vs placebo

ACNILYS® limits inflammatory lesions and redness.

• ACNILYS® IMPROVES GLOBAL ASPECT OF SKIN: MOISTURIZATION AND RADIANCE



Mean±SEM, Δ% D0 vs D28, * p < 0.05 vs placebo, ** p < 0.01 vs placebo



ACNILYS® is a multifunctional active, which balances oily, acne-prone and blemish skins.

FORMULATION

Use concentration: 0.5 - 2 %

Use pH: 4.0 - 6.5

Caution for use:

Add to emulsions, at the end of the preparation process, either cold or at 35-40 °C, during cooling.

TECHNICAL DATA

Characteristics

Organoleptic Appearance: liquid
Colour: red amber to brown

Solubility Water soluble (10%)
Glycols soluble (10%)

Storage

Keep in a dark place, in the original packaging, at an ambient temperature between 15 and 25 °C.

Tests of tolerance

- Eye irritation: practically non-irritant
- Skin irritation: non-irritant
- Sensitization: very good skin compatibility

INCI Name: Aqua/Water, Propanediol, Rhodomyrtus tomentosa Fruit Extract

Preservative: None

Authorized:

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