Cutipure CLR™

Provides pure
Complexion

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Introduction

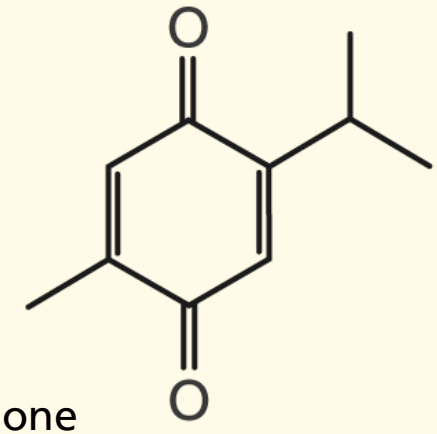
Contains actives coming from Black Cumin, Chaulmoogra, Magnolia and Manuka

Benefits:

- Has anti-microbial properties against *P. acnes*
- Minimizes inflammatory circumstances in mixed skin
- Reduces comedones, pustules and pimples
- Regulates sebum production

Thymoquinone from *Nigella sativa*

- Black Cumin is an annual herbaceous plant with white blossoms
- Cultivated in Asia and the Arabian region
- Antimicrobial and anti-inflammatory activity
- Strong antioxidant

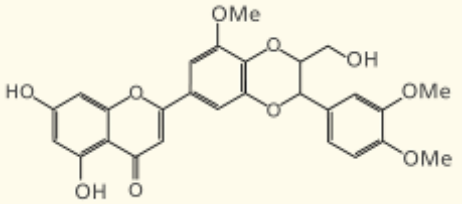


Thymoquinone

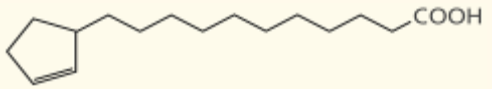
Various Actives from *Taraktogenos kurzii*

- Chaulmoogra are medium to large trees of Indonesia, Malaysia, and the Philippines
- 5'-Methoxyhydnocarpin is a so-called ‚Multidrug resistance inhibitor'
- Hydnocarpic, Gorlic and Chaulmoogric acid are cyclopentenyl fatty acids
- Strongly antimicrobial and anti-inflammatory activity

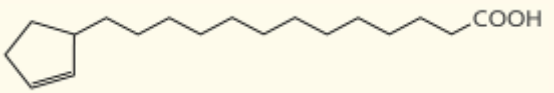
5'-Methoxyhydnocarpin



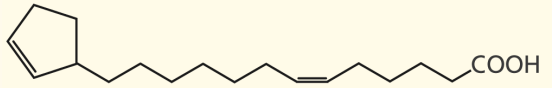
Hydnocarpic acid



Chaulmoogric acid



Gorlic acid



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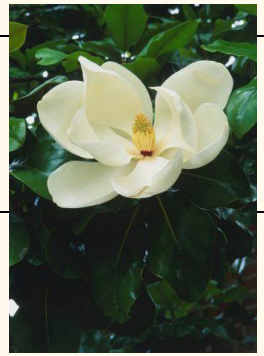
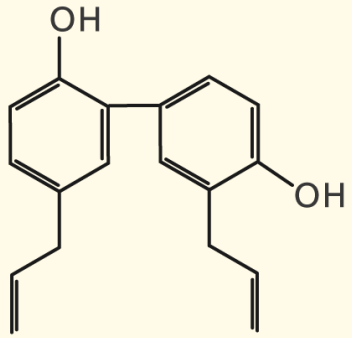
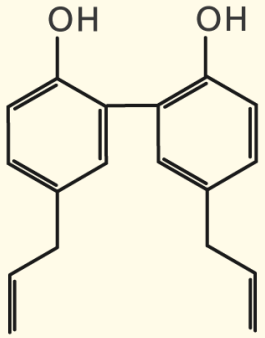
Honokiol and Magnolol from *Magnolia grandiflora*



- Magnolia is native to the southeastern United States
- Polyphenols with anti-inflammatory and antimicrobial activity
- Strong antioxidants



Honokiol

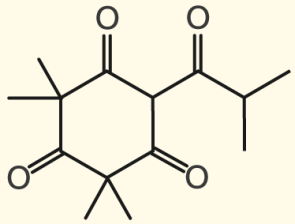


Magnolol

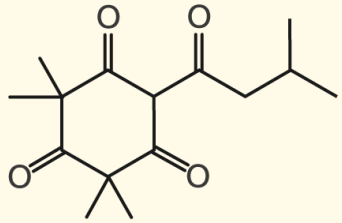
β-Triketones from *Leptospermum scoparium*

- Manuka from New Zealand is related to Australian tea tree oil, but a tenfold stronger activity
- Traditionally used by the Maoris for wounds, burns and insect bites
- Potent antimicrobial, especially against Gram-positive bacteria

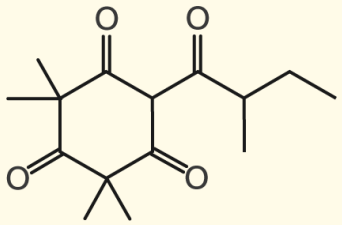
Flavesone



Leptospermone

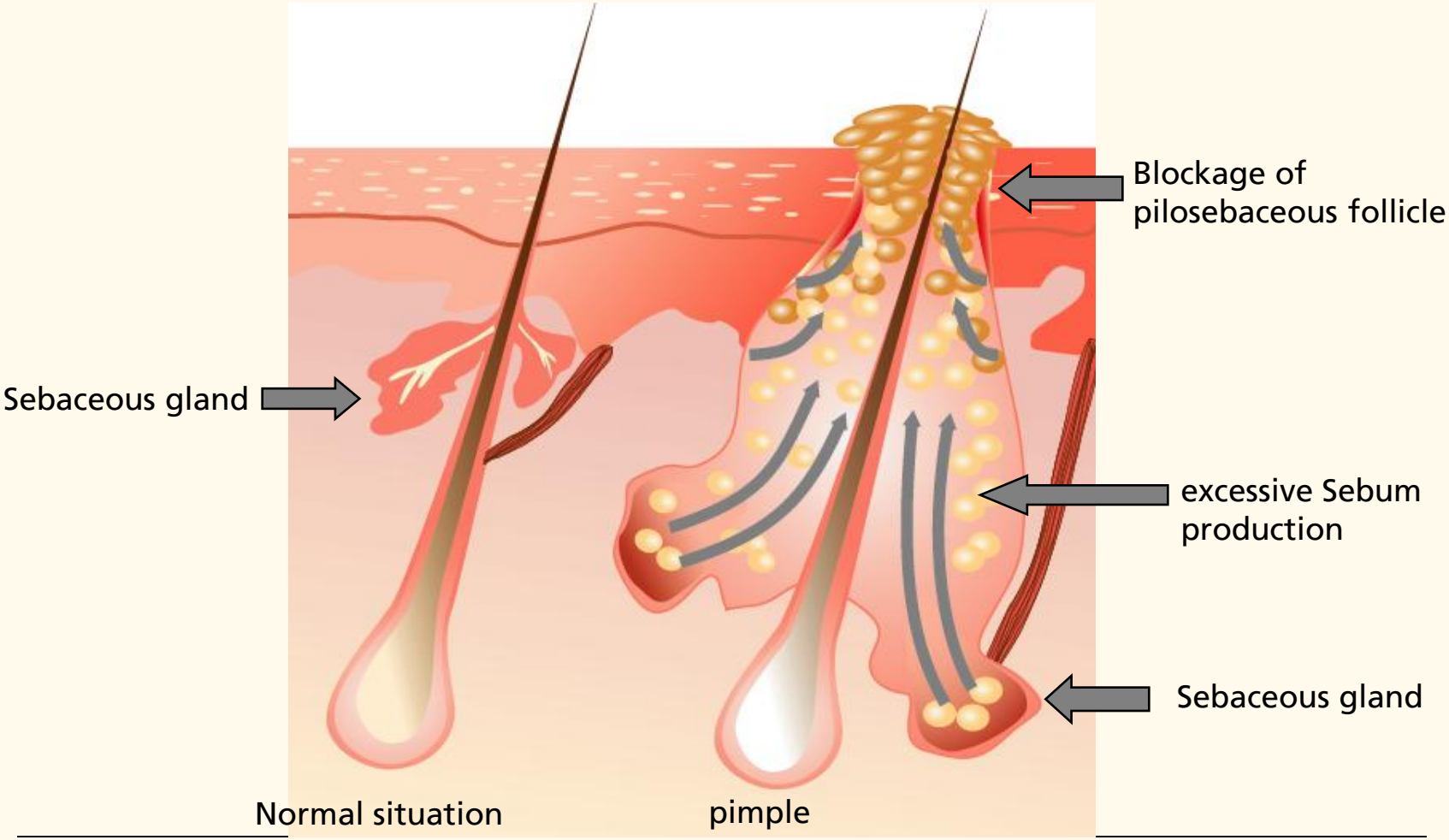


Isoleptospermone



Cutipure CLR™

Development of Pimples



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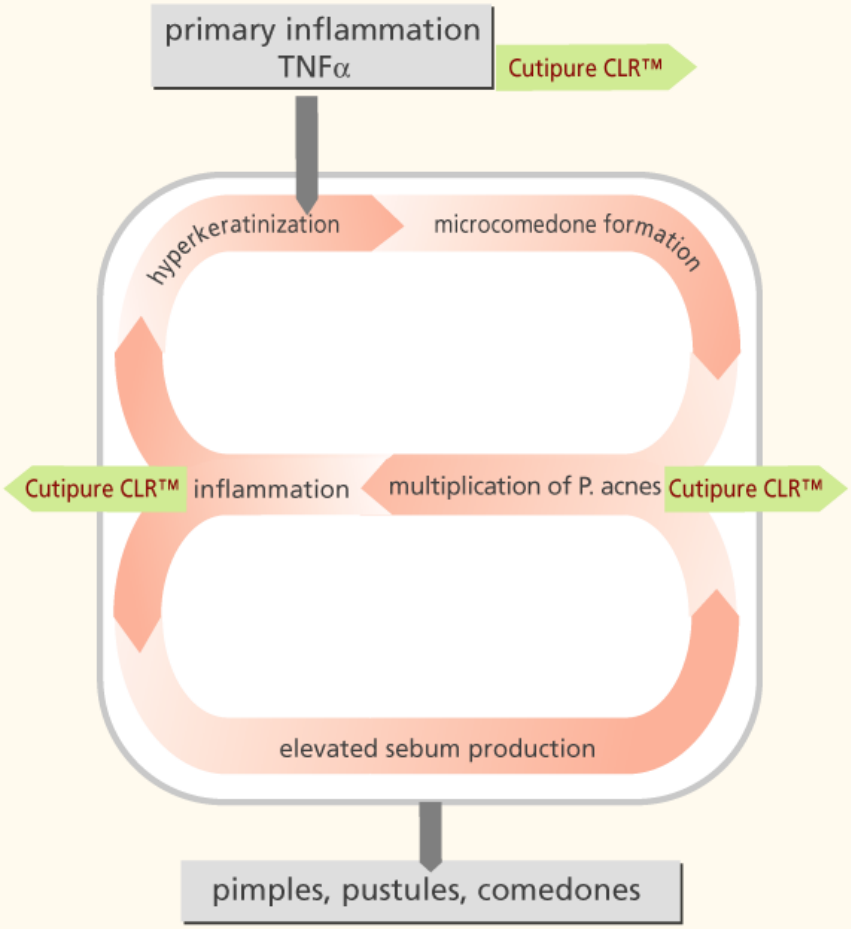
Mechanisms in oily Skin



Cutipure CLR™

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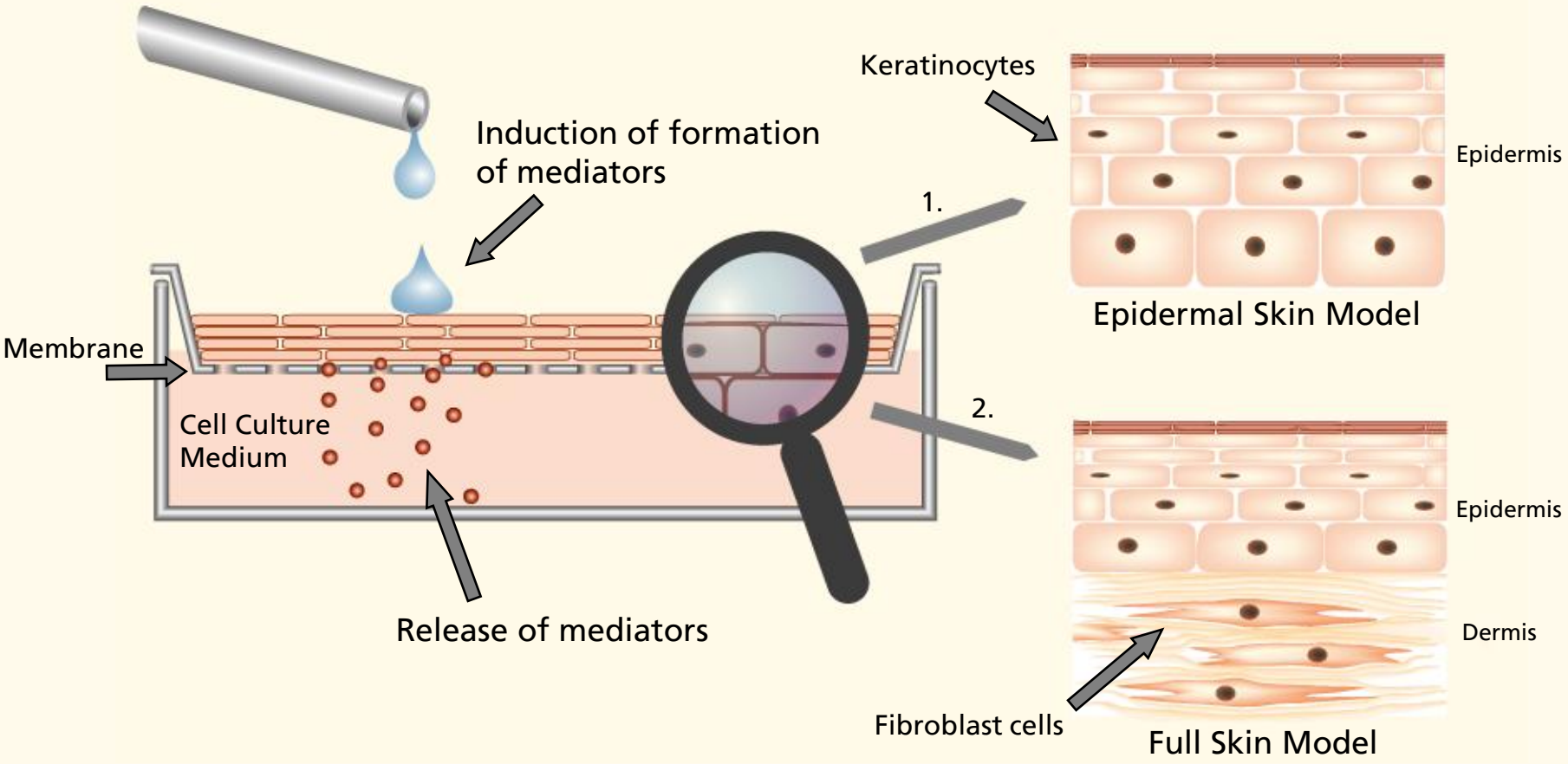
in vitro Results

Skin Model



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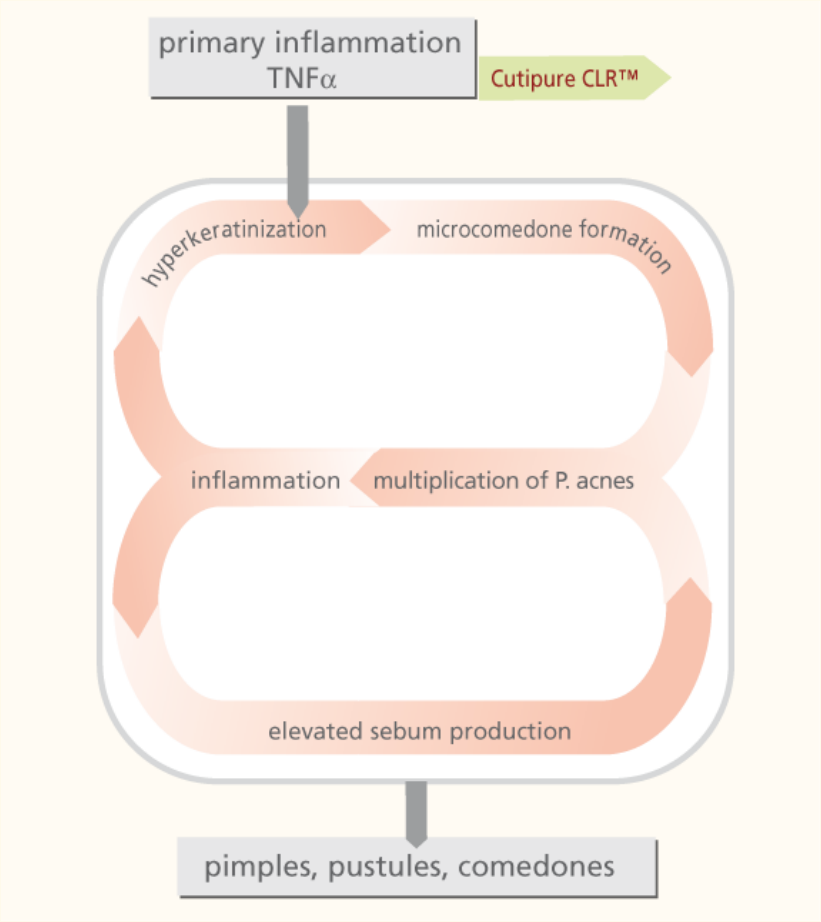
Influence on Primary Inflammation



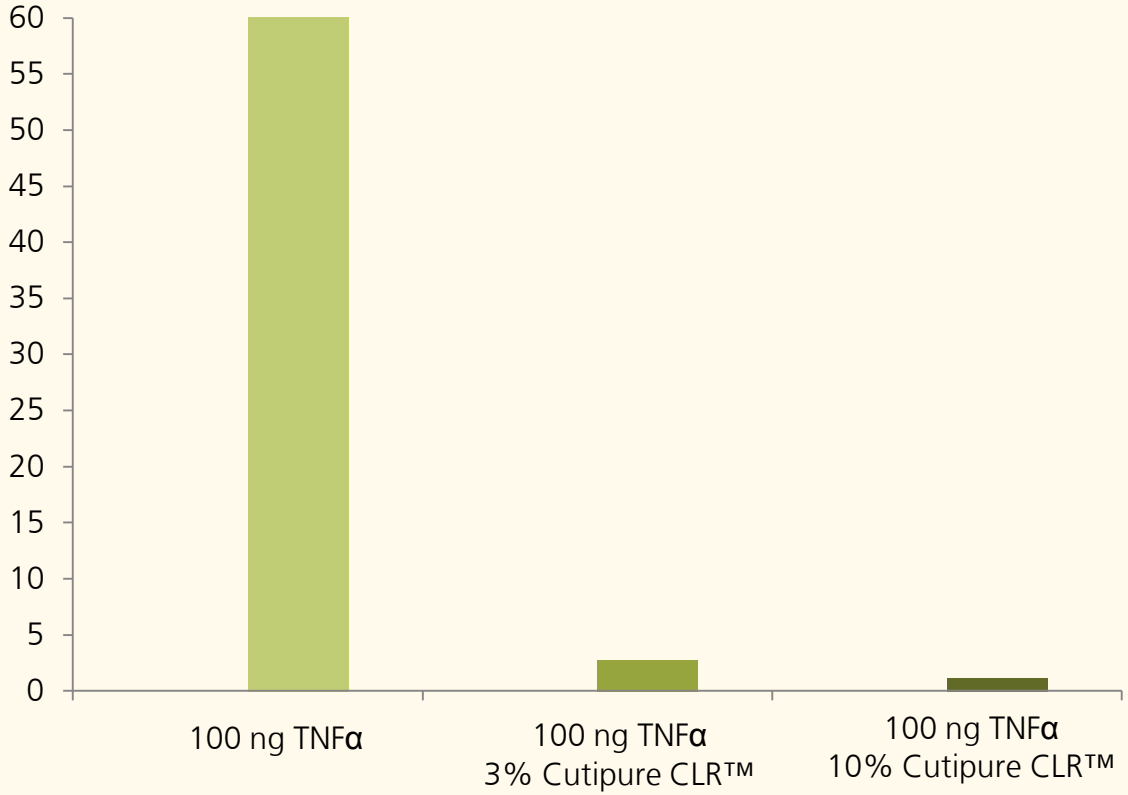
Cutipure CLR™

Influence on TNFα induced primary Inflammation

Reduction of TNFα (pg/ml)

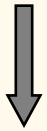
TNFα was applied on a full skin model.
After 3 hours Cutipure CLR™ was added and the model was incubated for 3 days.

Method:
TNFα was detected by chemiluminescence ELISA

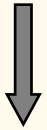


Other Sources of Inflammation in Pimples and Pustules

Squalene: important component of sebum

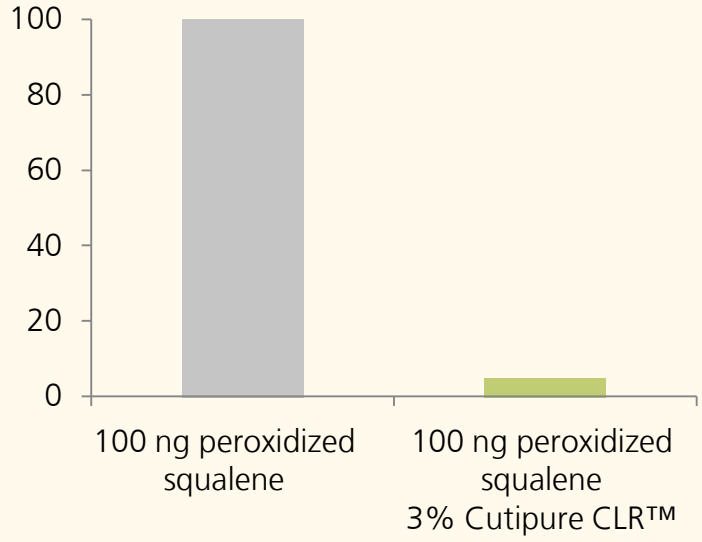


peroxidized Squalene

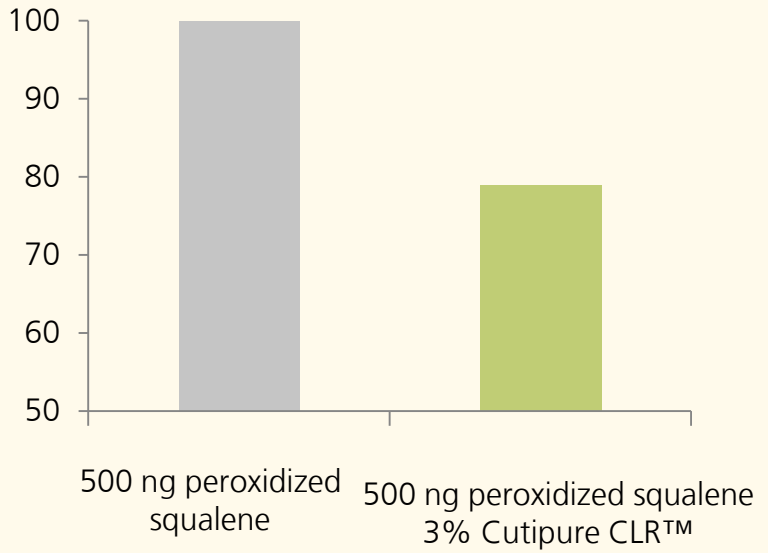


Inflammation
(IL-6)

Influence on PGE_2 and TNFα Expression after Treatment with peroxidized Squalene



PGE_2 (%)



TNFα (%)

Content of PGE_2 and TNFα after stimulation with peroxidized Squalene (20 J/cm² UVA). After 3 hours Cutipure CLR™ was added and the epidermal skin model was incubated for 3 days.

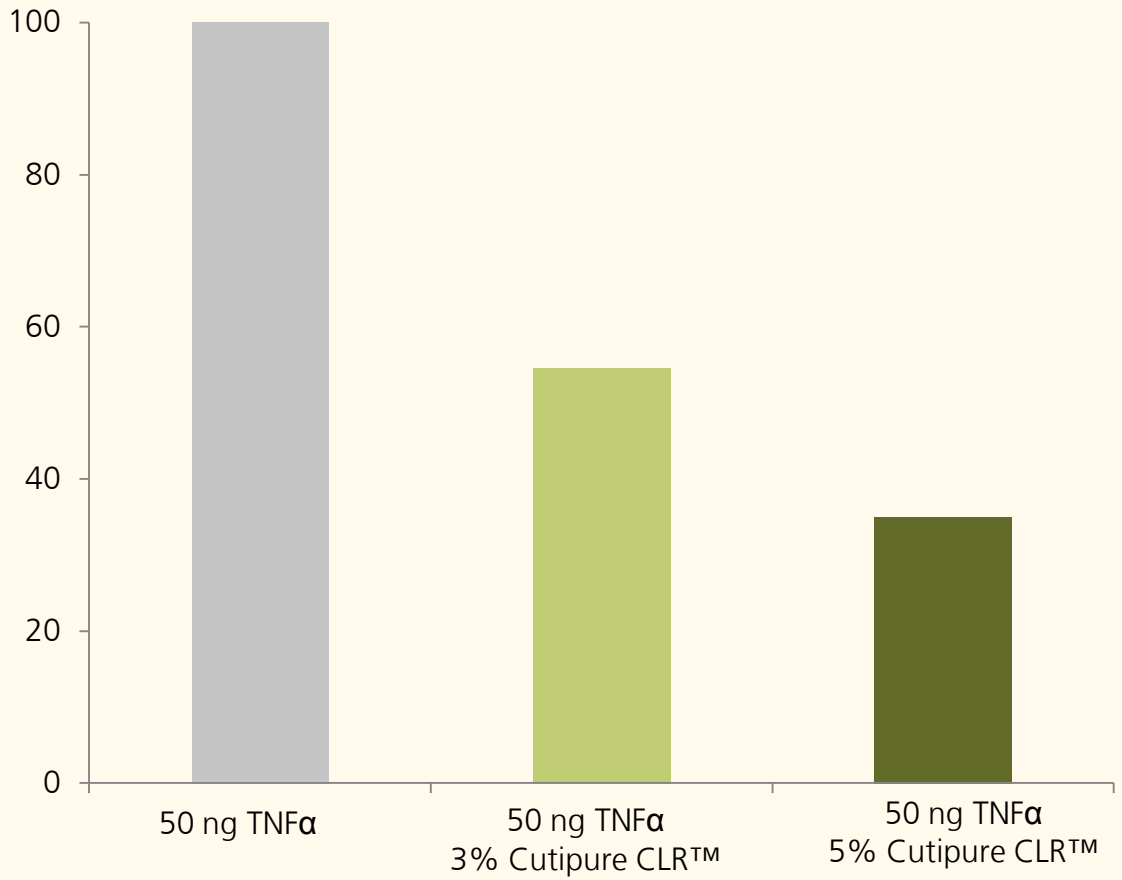
Detected by ELISA

Influence on IL-6 Expression after Treatment with TNFα

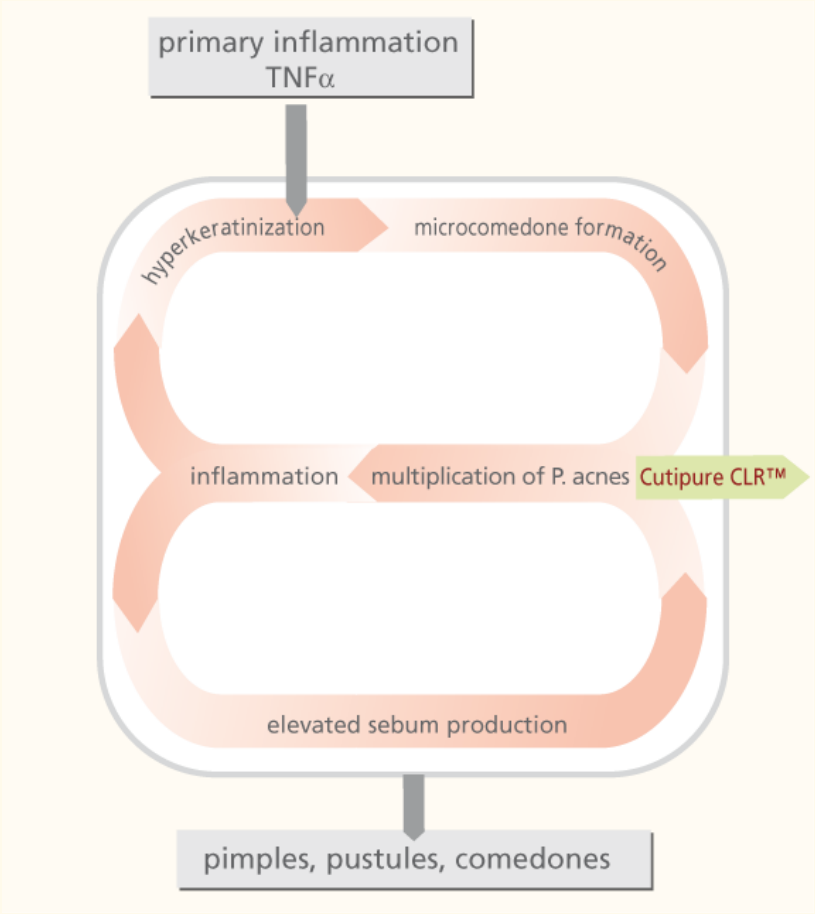
IL-6 content (%)

Content of IL-6 after stimulation with 50 ng TNFα.
After 3 hours Cutipure CLR™ was added and the epidermal skin model was incubated for 2 days.

Method:
IL-6 was detected by chemiluminescence ELISA



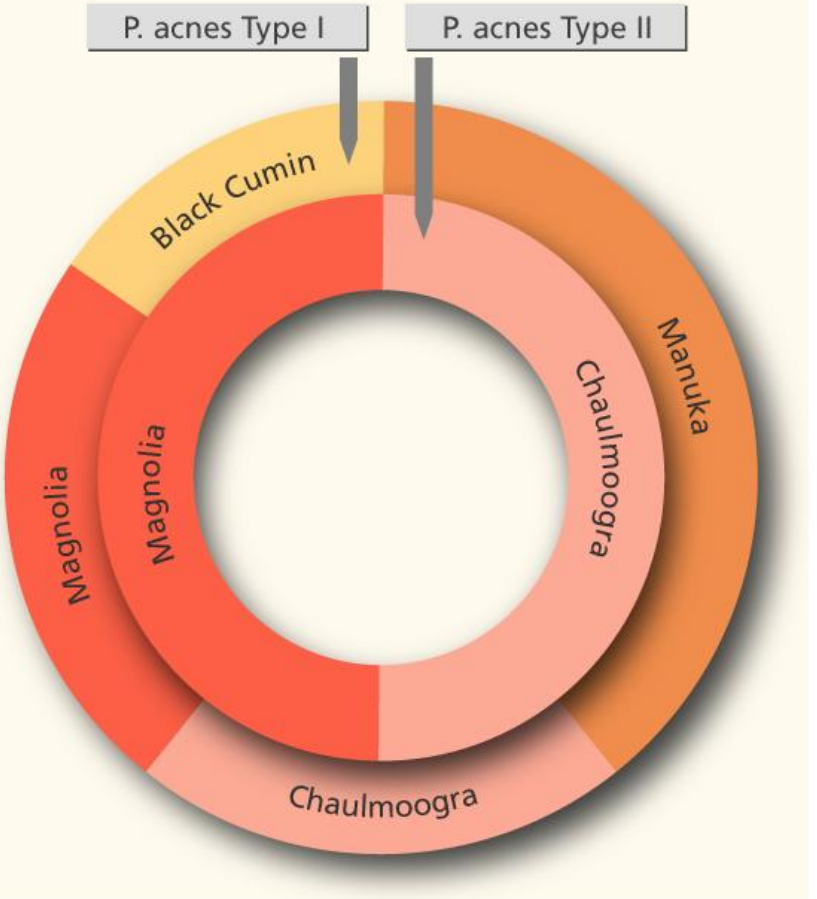
Reduction of growth of *P. acnes*



Cutipure CLR™

Antimicrobial Activity

- *P. acnes* becomes easily resistant to antimicrobials
- Broad range of antimicrobial mechanisms is needed
- Synergistic effect of the blend

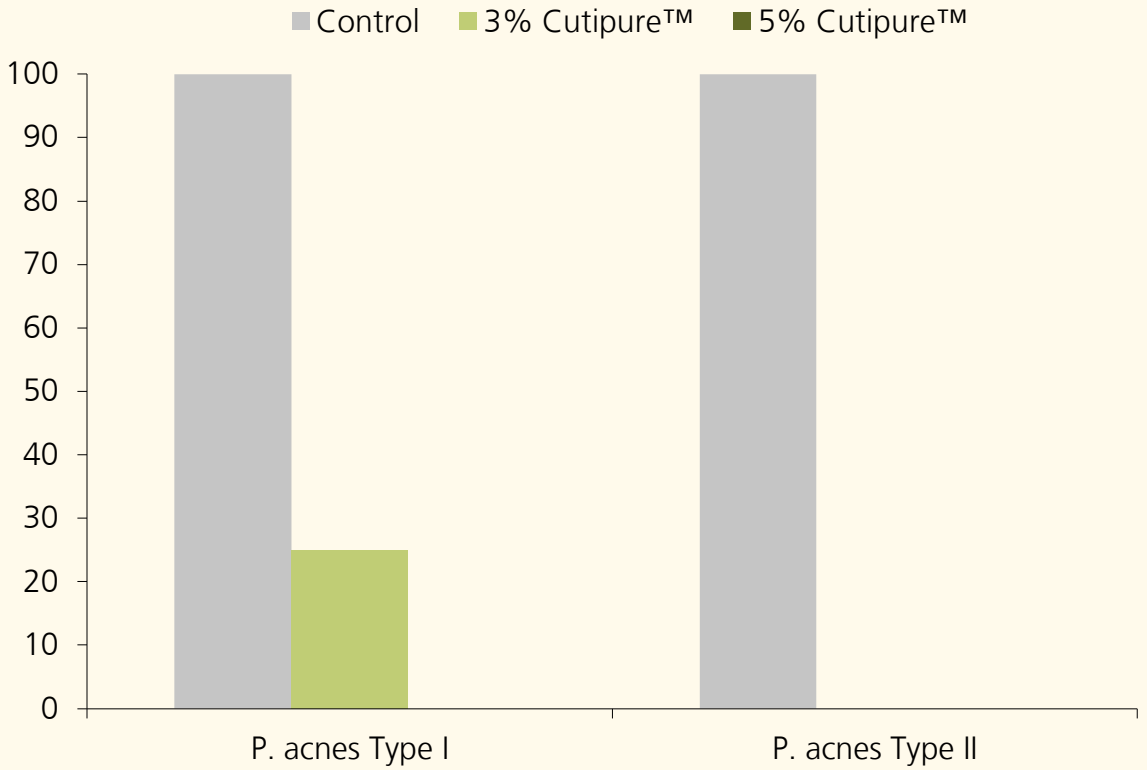


Influence on Growth of *P. acnes*

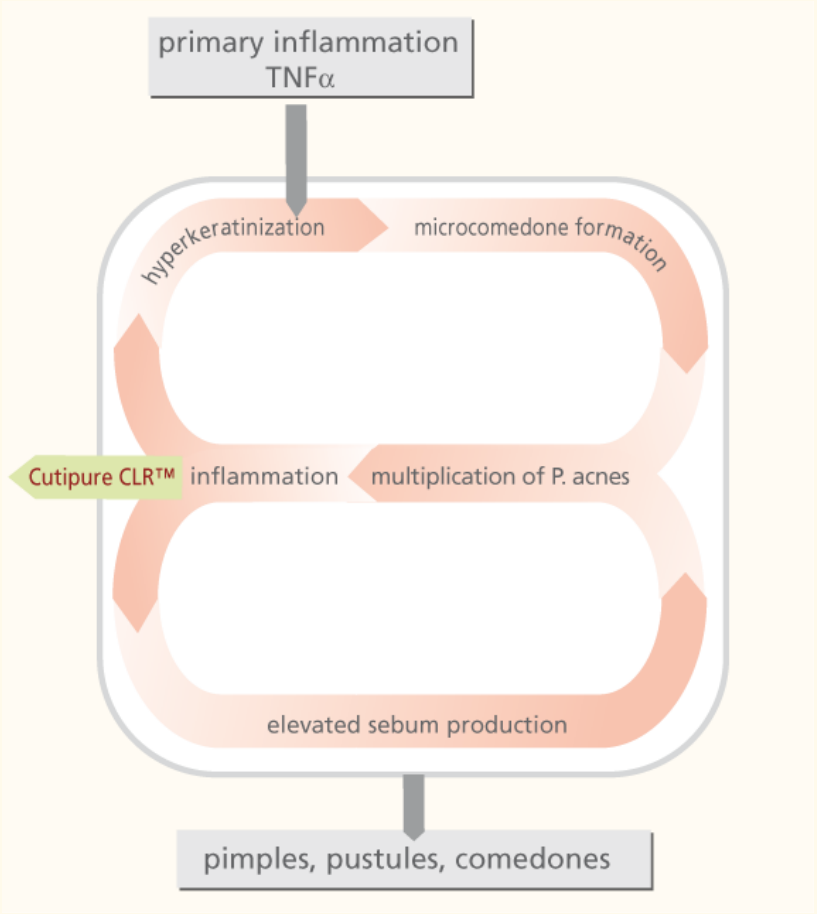
Growth of P. acnes (%)

48 hours incubation,
under anaerobic conditions.

P. acnes type I: ATCC 6919
P. acnes type II: DSM 16379



Regulating Inflammation



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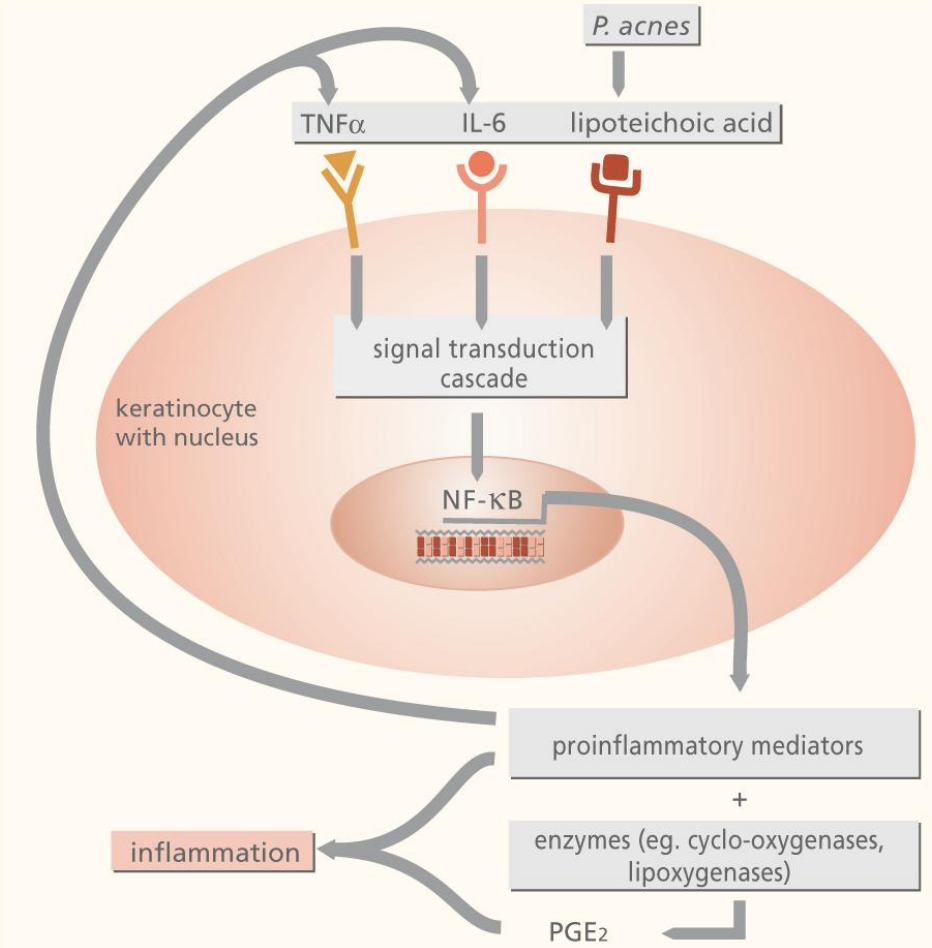
P. acnes induced Inflammation

Amplification of inflammation via NF-κB



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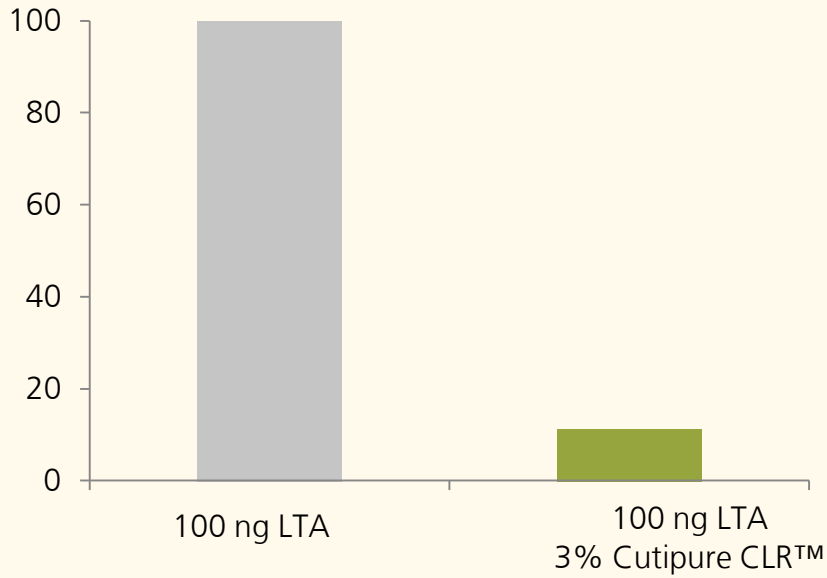
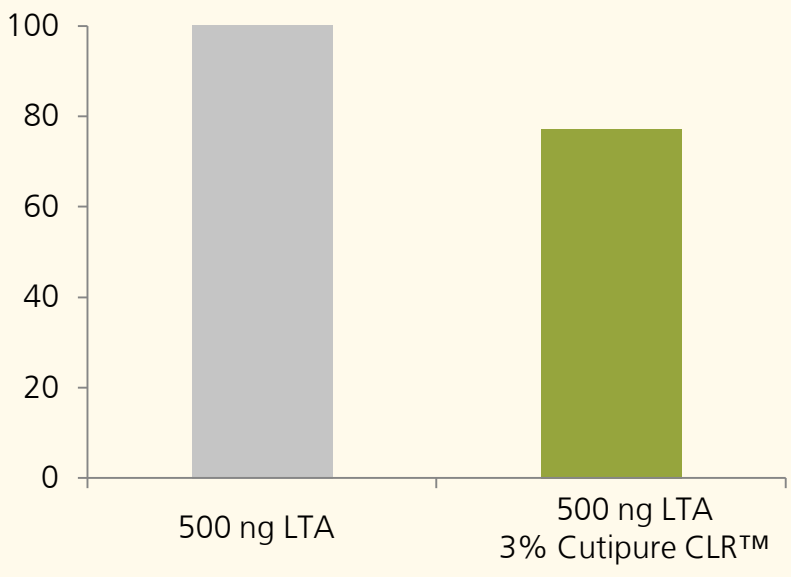
Influence on PGE_2 and TNFα Expression after LTA Treatment



PGE_2 content (%)



TNFα content (%)

LTA (Lipoteichoic acid) was applied on a epidermal skin model. After 3 hours Cutipure CLR™ was added and the model was incubated for 2 days.

Detected by ELISA

Cutipure CLR™

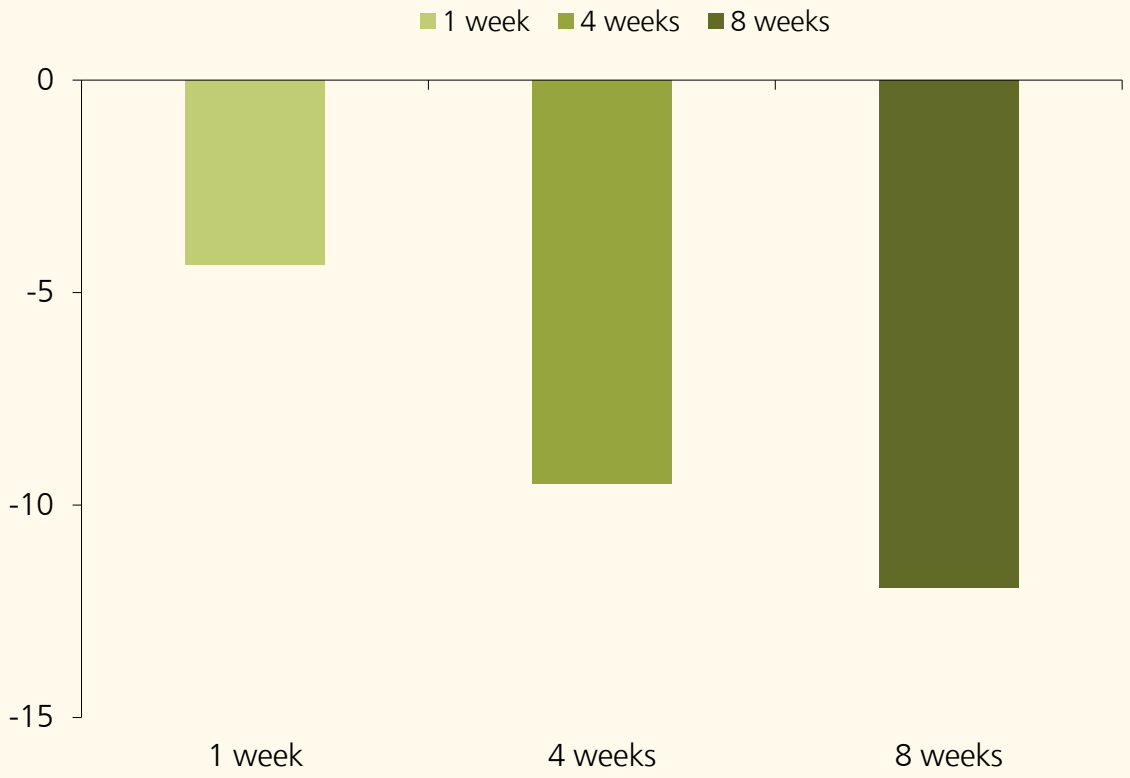
in vivo Results

Influence on Sebum production

Reduction of sebum (%)

Results of a study on 20 volunteers (female and male, age range 17 – 42) suffering from problem skin (oily skin); A formulation containing 3% Cutipure CLR™ was applied twice daily on the acne-affected areas of the face. A part of the forehead was the control area.

Sebumeter measurement



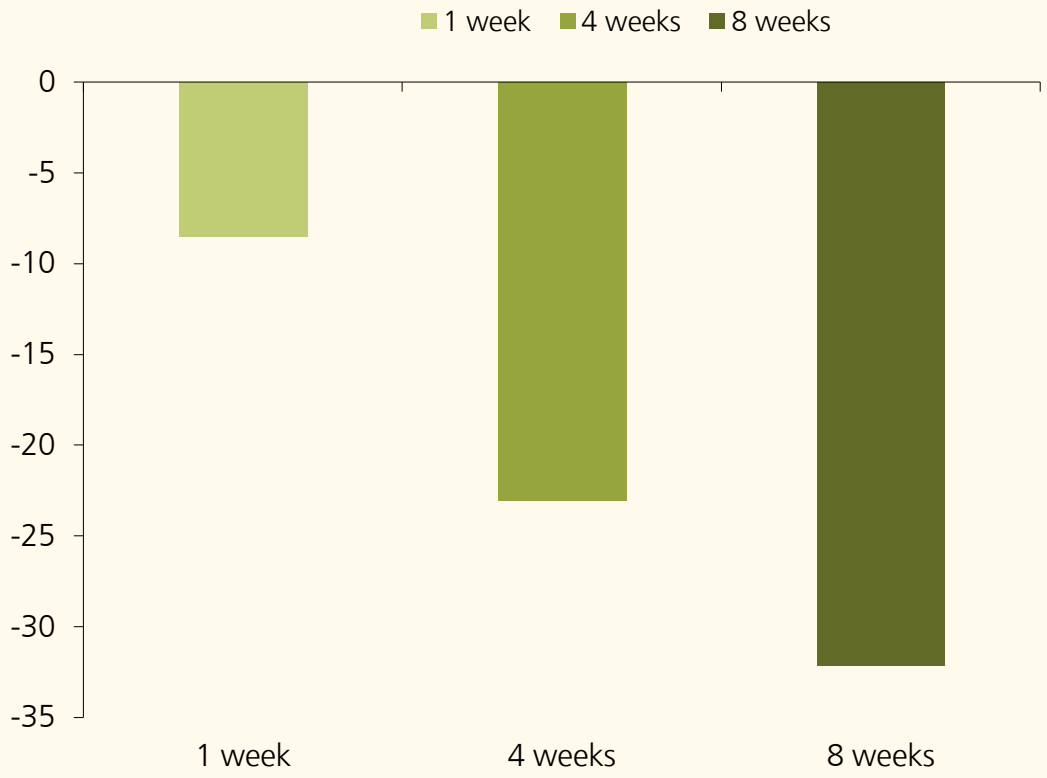
Cutipure CLR™

Influence on Comedones (Blackheads)

Reduction of comedones (%)

Results of a study on 20 volunteers (female and male, age range 17 – 42) suffering from problem skin (oily skin); A formulation containing 3% Cutipure CLR™ was applied twice daily on the acne-affected areas of the face. Comedones were marked on a transparency that was spread over the face; then, markings were counted.

Values are related to initial conditions.

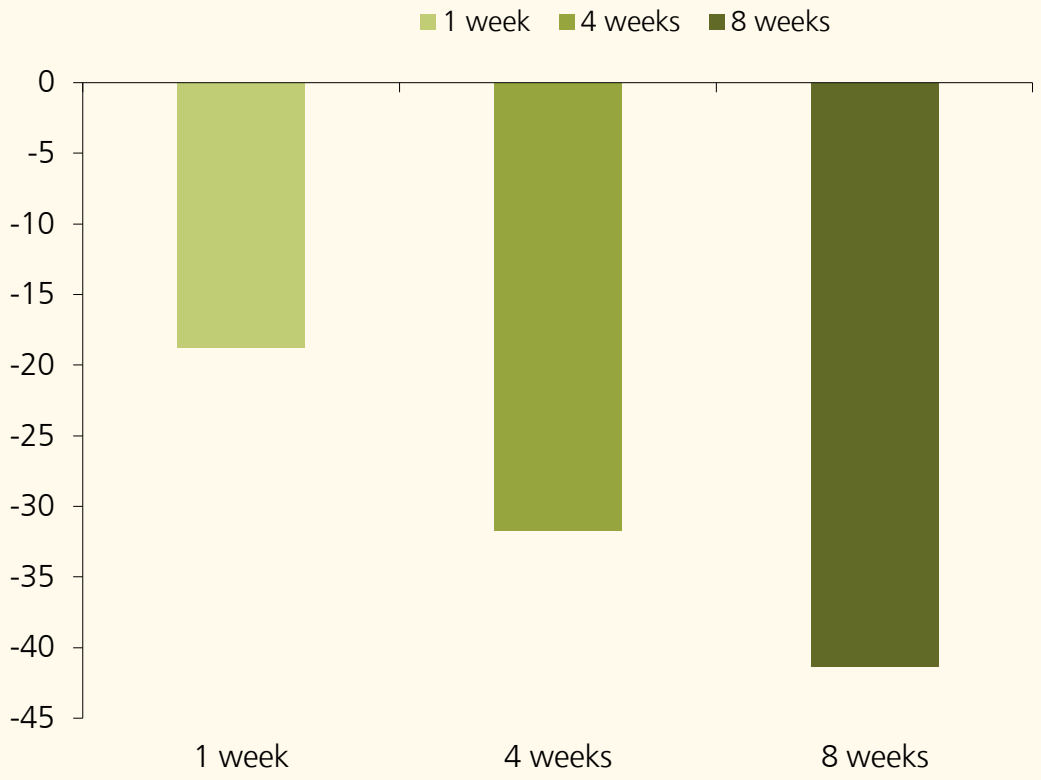


Influence on Pustules (Whiteheads)

Reduction of pustules (%)

Results of a study on 20 volunteers (female and male, age range 17 – 42) suffering from problem skin (oily skin); A formulation containing 3% Cutipure CLR™ was applied twice daily on the acne-affected areas of the face. Pustules were marked on a transparency that was spread over the face; then, markings were counted.

Values are related to initial conditions.

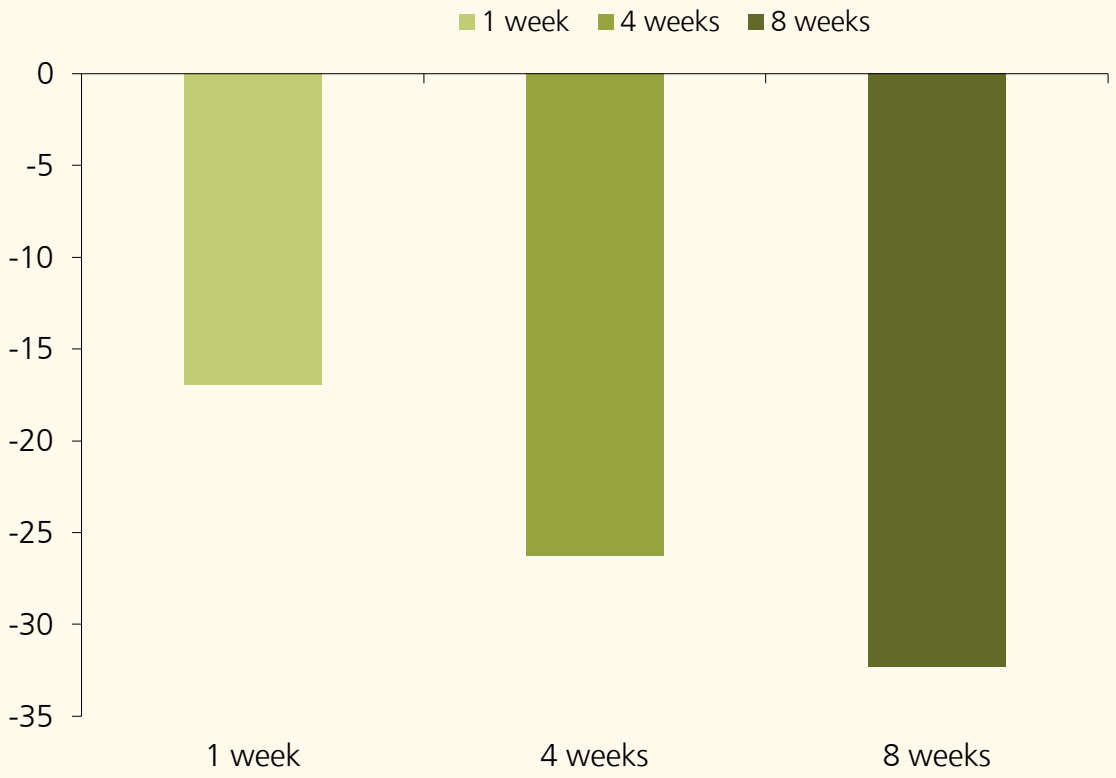


Influence on Pimples

Reduction of pimples (%)

Results of a study on 20 volunteers (female and male, age range 17 – 42) suffering from problem skin (oily skin); A formulation containing 3% Cutipure CLR™ was applied twice daily on the acne-affected areas of the face. Pimples were marked on a transparency that was spread over the face; then, markings were counted.

Values are related to initial conditions.

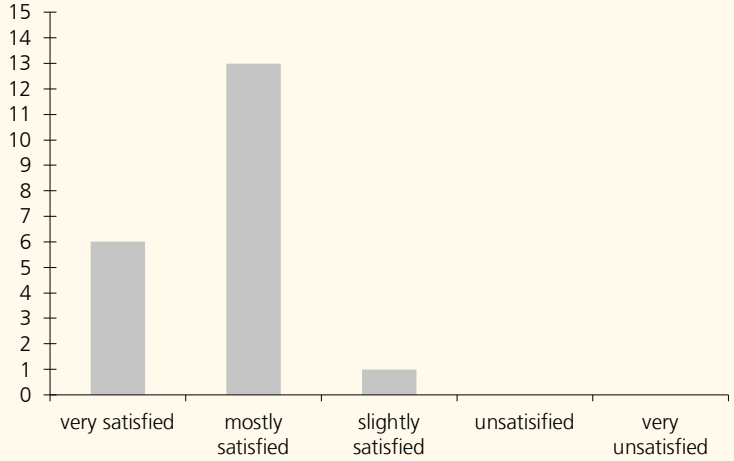


Cutipure CLR™

Questionnaire

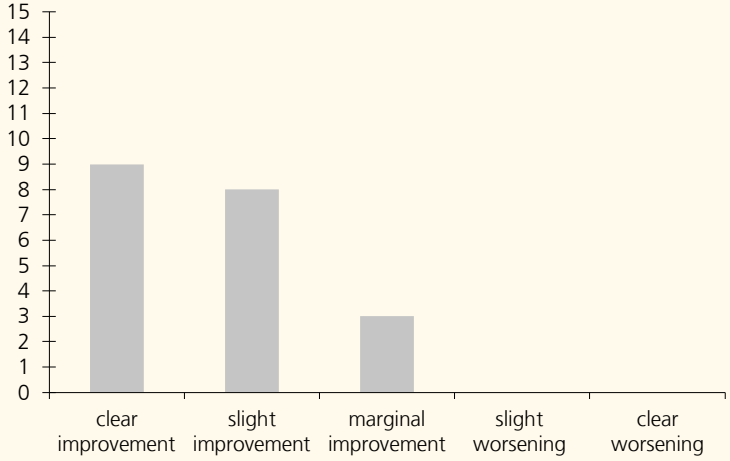
Questionnaire after Test Period of 8 Weeks

How satisfied are you in general with the tested product?



Would you say the product effectively fights against pimples?

Would you say the product has changed the condition of your skin?



Would you say the product helps against impure skin?

Cutipure CLR™

Summary

in vitro

- Reduction of primary inflammation (TNFα, IL-6)
- Reduction of inflammation caused by *P. acnes* (TNFα, PGE_2)
- Reduction of growth of two different types of *P. acnes*

in vivo

- Regulation of sebum production
- Reduction of comedones,
  pustules and pimples

INCI: Water, Taraktogenos Kurzii Seed Oil, Nigella Sativa Seed Oil, Leptospermum Scoparium Branch/Leaf Oil, Potassium Lauroyl Wheat Amino Acids, Palm Glycerides, Capryloyl Glycine, Magnolia Grandiflora Bark Extract

Dosage: 3%

Preservation: 0.8% Phenoxyethanol

Recommended pH: 3.0 – 8.0