

SEPPIC

j'Active

SEPICONTROL™ A5

*Seppic creation
for a pure Skin*

Powerful
life
style



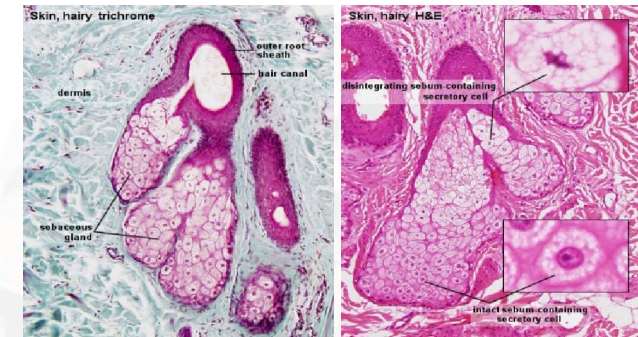
Youth & Perfect look

Oily acne prone Skin:

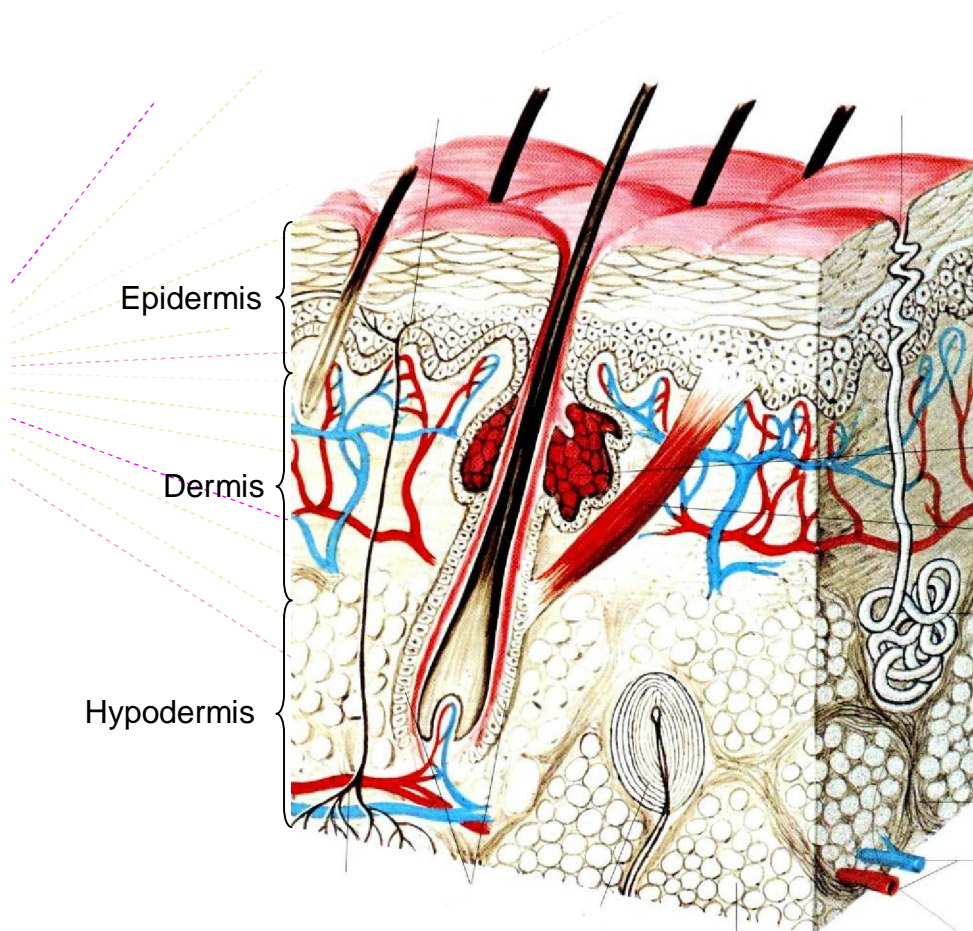
- ✧ Shiny, unclean-looking, greasy
- ✧ Blemishes, blackheads and spots
- ✧ 80%* of teenagers suffer from acne (hormonal imbalances due to puberty)
- ✧ 34%* of adults between 35 and 54 years old, of which 20% of women and 14% of men, are concerned by this problem
- ✧ Greasy, acne prone skin accounts for 20%* of dermatological consultations

A problem skin can lead to physical and psychological repercussions

BEING “ATTRACTIVE” IS MORE THAN JUST A PERSONAL DESIRE; IT CONTRIBUTES TO SOCIAL CONSTRUCTION



Histologic image of the sebaceous gland: multilobular gland



Sebum:

- ✧ Skin protection (hydrolipidic film)
- ✧ Prevents dehydration of the corinified layer

Dysfunction:

- ✧ Oily acne prone skin

Youth & Pure Skin

: A synergy of components for a **multifunctional active ingredient**
Specially dedicated to the needs of oily acne prone skins

OCTANOIC ACID

GLYCINE

LIPACIDE C8G

Protects the skin's
ecosystem

DRY EXTRACT OF CEYLAN CINNAMON

Rich in tannins: astringent

SEPICONTROL A5

Patented by SEPPIC



INCI name: Capryloyl Glycine & Sarcosine & Cinnamomum zeylanicum bark extract

: Reference on the market, clinically validated

Tested on volunteers:

- ✘ Formula 6711 with 4% SEPICONTROL A5
- ✘ 20 volunteers with greasy acne prone skin
- ✘ 8 weeks treatment
- ✘ 2 applications a day

Quantification at T0 and T= 8 weeks:

- ✘ Number of comedones (clinical/ dermatological)
- ✘ Skin-surface lipids (sebumeter)
- ✘ Sensorial quantification
(evaluated by volunteers (IEC No 70613RD))

6711 Formula

A	MONTANOV 202 <i>(Arachidyl alcohol/behenyl alcohols & Arachidylglucoside)</i>	3.00%
B	Water SEPICONTROL A5 <i>(Capryloyl glycine & sarcosine & cinnamonum zeylanicum bark extract)</i>	QSP 100% 4.00%
C	Dimethicone Isohexadecane	4.00% 8.00%
D	SEPIGEL 305 <i>(Polyacrylamide/C13- 14 isoparaffin/ Laureth- 7</i>	2.00%
E	SEPICIDE HB <i>(Phenoxyethanol/Methylparaben/ Ethylparaben/Propylparaben/Butyl paraben</i> Perfum	0.50% 0.20%

Youth & Pure Skin

: After 8 weeks treatment with **SEPICONTROL A5** skin is visibly rid of impurities, and less greasy

PURIFYING & SEBOREGULATING

✧ Clearly improved skin appearance

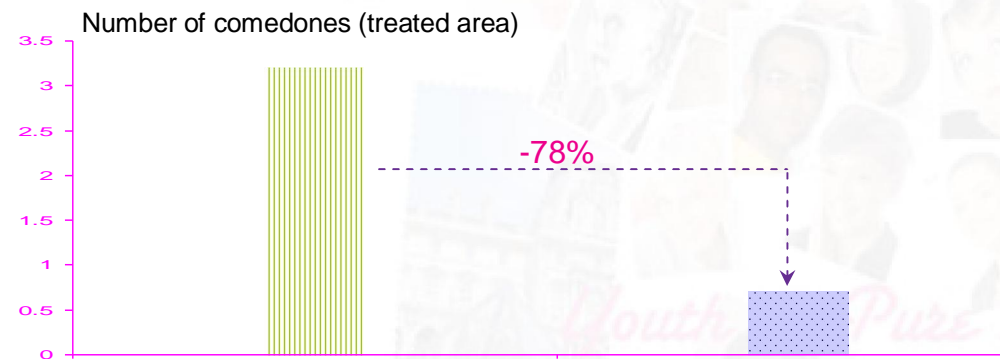
✧ Reduced number of comedones -78%

✧ Reduced skin lipids -20%

Control
before treatment (D0)



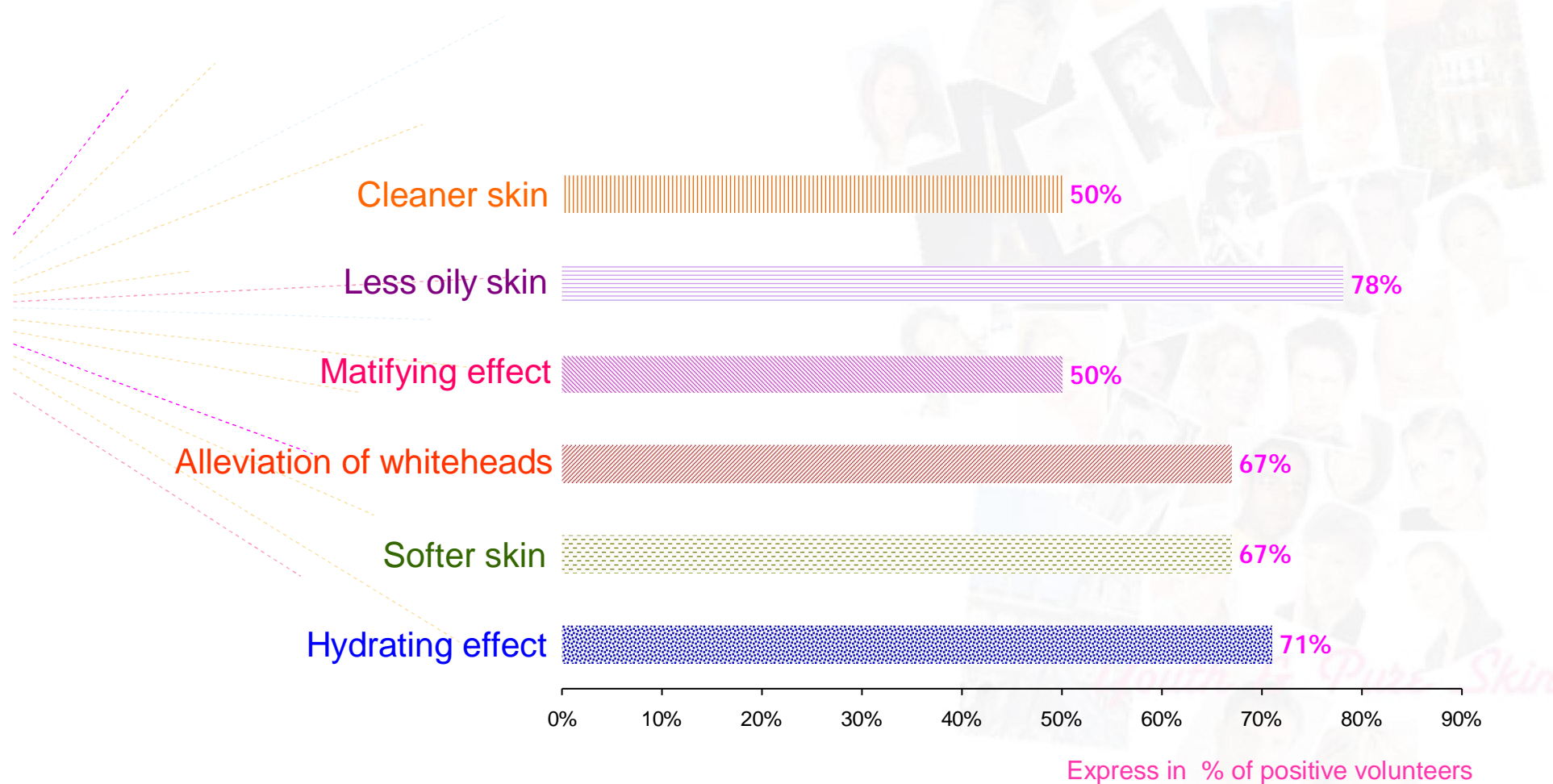
After treatment
(D54) with
SEPICONTROL A5



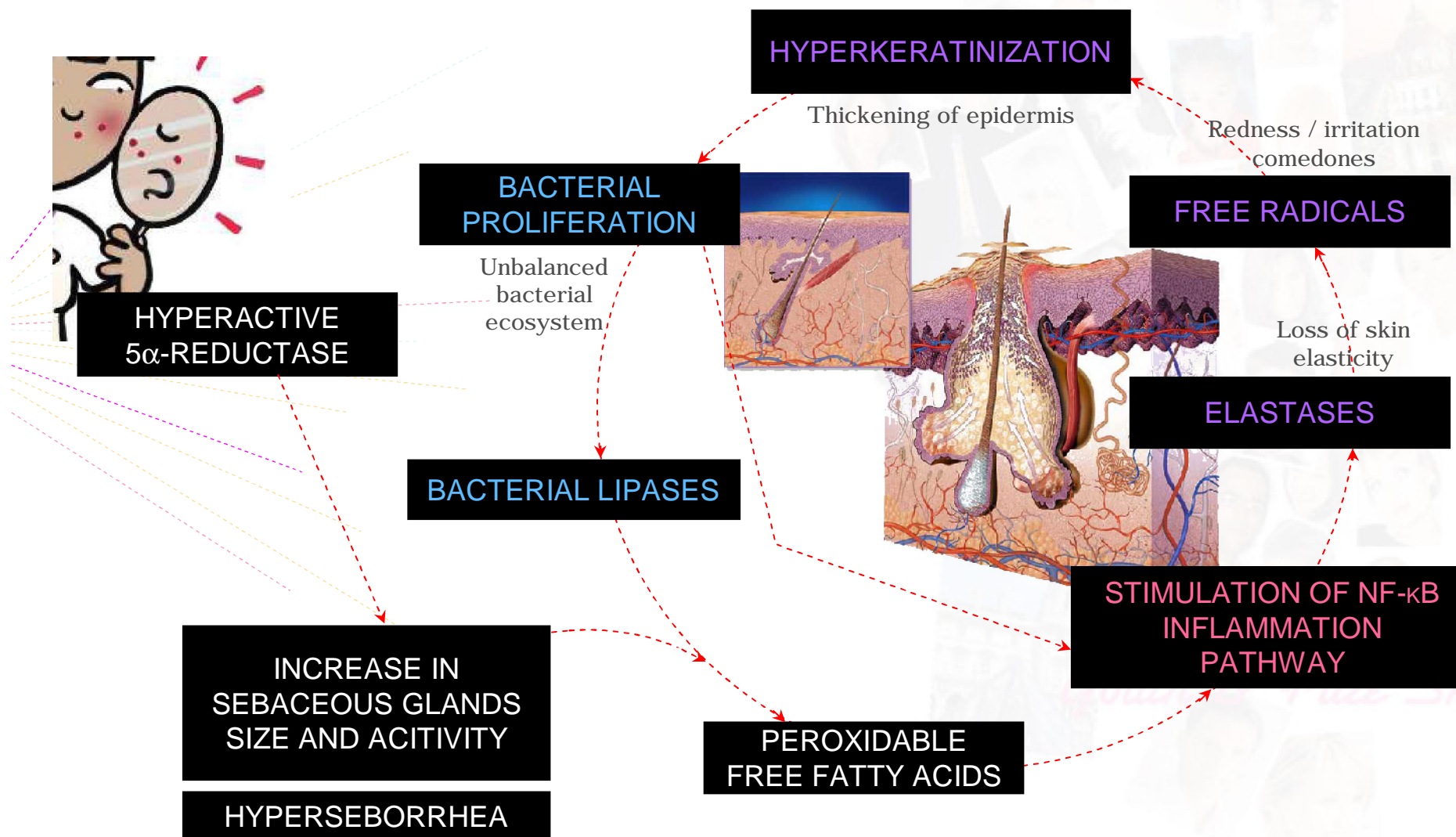
(statistically significant results measured with a sebumeter)

: Efficiency of tested formula evaluated by volunteers (6711)

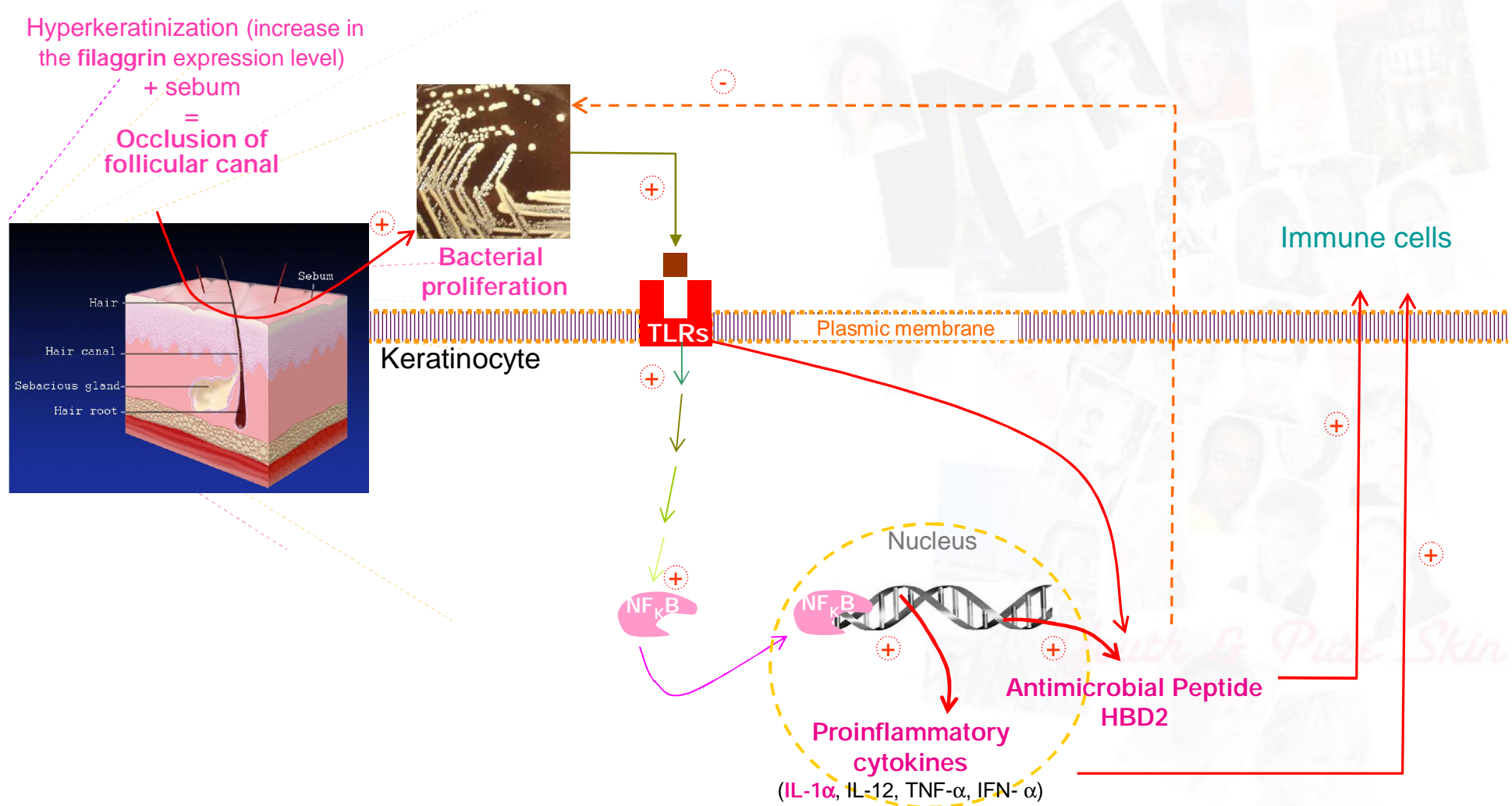
Skin is clean, less oily, more matte, and cleared of imperfections!



: Main causes for unbalanced skin



: Signalling pathway regulating immune and inflammatory response in keratinocytes of oily acne prone skin



New properties

Boosts immune defences:

Reduces inflammation:

Controls hyperkeratinization:

SEPICONTROL A5 mode of action

Increases the protein expression level of an antimicrobial peptide in cultures of stimulated keratinocytes : **HBD2** (human beta-defensin 2)

Reduced the release of a proinflammatory cytokine released by keratinocytes: **INTERLEUKIN-1 α**

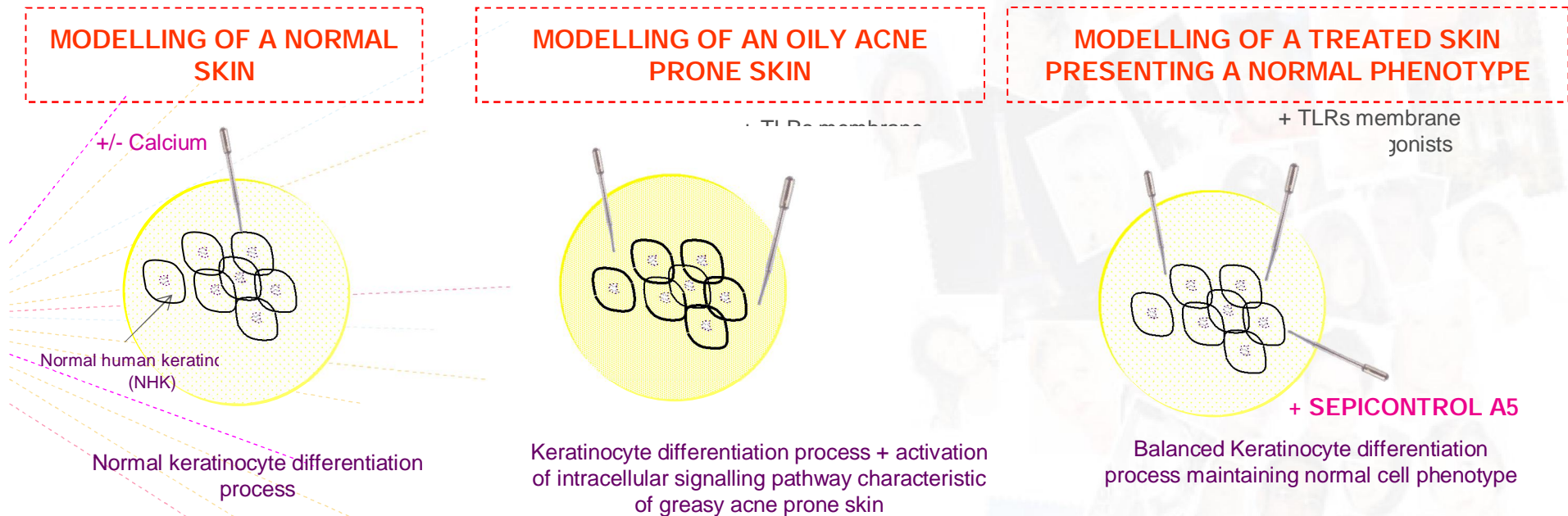
Reduces the protein expression level of a keratinocyte differentiation marker: **FILAGGRIN**

NEW DATA



: Establishment of *in vitro* modelling tools of different types of skin using cultures of stimulated keratinocytes

Figure 1:



Quantification of **SEPICONTROL A5** dermopurifying activity:

- ✧ **Anti-bacterial effect:** quantification of **HBD2** protein expression level
- ✧ **Controls hyperkeratinization:** quantification of **filaggrin** protein expression level
- ✧ **Fights inflammation:** quantification of secreted **Interleukine-1 α**

: Specifically targets each factor responsible for unbalanced skin



⌘

Prevents
the proliferation of
microbes and stimulates
immune defences

- Stimulates the protein expression level of an antimicrobial peptide: **HBD2**
- Inhibits bacterial proliferation at a low concentration

⌘

Controls
hyperkeratinization



- Decreases **filaggrin** expression level (a protein marker of keratinocyte differentiation)

•

Fights
inflammation

- Reduces interleukine- 1 α production



- Anti- elastase activity
- Anti- radical activity

•

Antiseborrheic
activity

- anti 5 α - reductase activity

•

Controls production
of peroxidable
free fatty acids

- Anti- **lipase** activity

[MODE OF ACTION]
in vitro tests



Prevents the
proliferation of microbes and
stimulates
immune defences

- ✧ Indirect effect: Increases the protein expression level of an antimicrobial peptide: HBD2
- ✧ Direct effect: fights the germs that contribute to unbalanced oily acne prone skin

: SEPICONTROL A5

= Increases the protein expression level of an antimicrobial peptide: HBD2

= Defence against microorganisms

Quantification of the regulating effect of SEPICONTROL A5 on immune defences: Measurement of the protein expression level of an antimicrobial peptide, HBD2

Protocol:

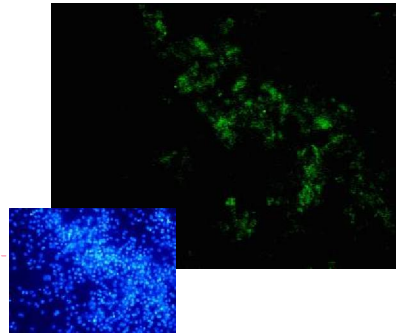
- ✧ Greasy acne prone skin modelling treated with SEPICONTROL A5 using *in vitro* cultures of stimulated keratinocytes (see figure 1)
- ✧ Measurement of HBD2 protein level expression (immunostaining) compared to total number of keratinocytes in culture (ratio expressed in arbitrary units, AU)

: Increased HBD2 protein expression level

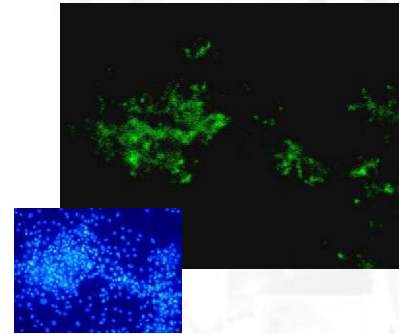
NEW DATA

Stimulated keratinocytes,
using TLRs agonists and
calcium, show a significantly
increased protein expression
level of HBD2 after treatment
with
SEPICONTROL A5

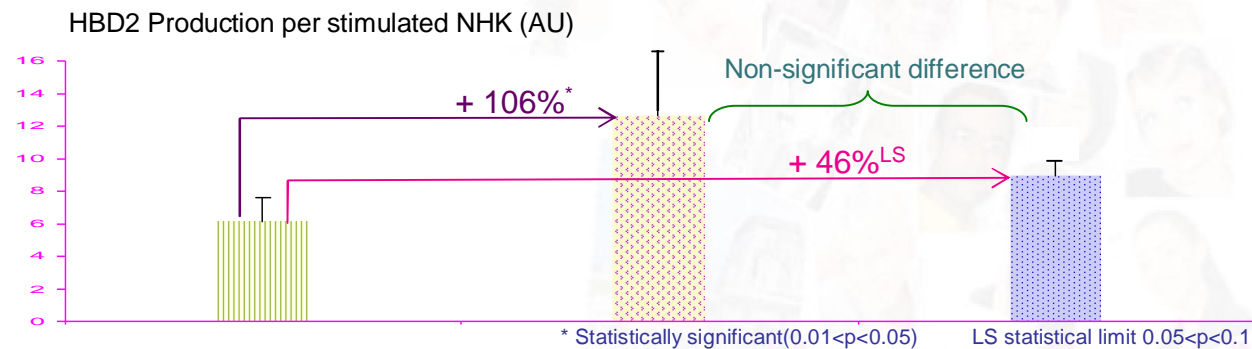
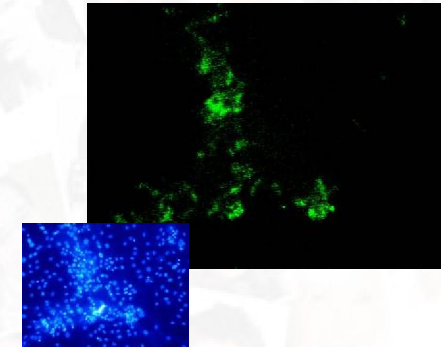
Control: stimulated
untreated cells



Stimulated cells +
Salicylic acid (0.005%
ma)



Stimulated cells +
SEPICONTROL A5
(0.005% ma)



SEPICONTROL A5 helps skin to defend itself better against microorganisms responsible for oily acne prone skin

: Defence against microorganism

SEPICONTROL A5 is more effective against the specific germs affecting oily acne prone skin than zinc gluconate (positive reference)

Values of CMI

Minimum Inhibiting Concentration (CMI)

Propionibacterium acnes (pH= 7)

Staphylococcus aureus (pH=5)

Staphylococcus epidermidis (pH=5)

Zinc gluconate
(m.a.)

0.125%

0.5%

0.06%

SEPICONTROL A5
(m.a.)

0.007%

0.001%

0.007%

Youth & Pure Skin

[MODE OF ACTION]

in vitro tests

Fights inflammation

- ✧ Reduces interleukine- 1 α production
- ✧ Anti- elastase activity
- ✧ Anti- radicular activity

NEW DATA

Youth & Pure Skin

: SEPICONTROL A5



cells

= Reduction of the amount of Interleukine-1 α released by

= Reduced skin irritation associated inflammation

Quantification of SEPICONTROL A5 anti-inflammatory activity: quantification of the decrease in production of a pro-inflammatory cytokine, interleukine-1 α (IL-1 α)

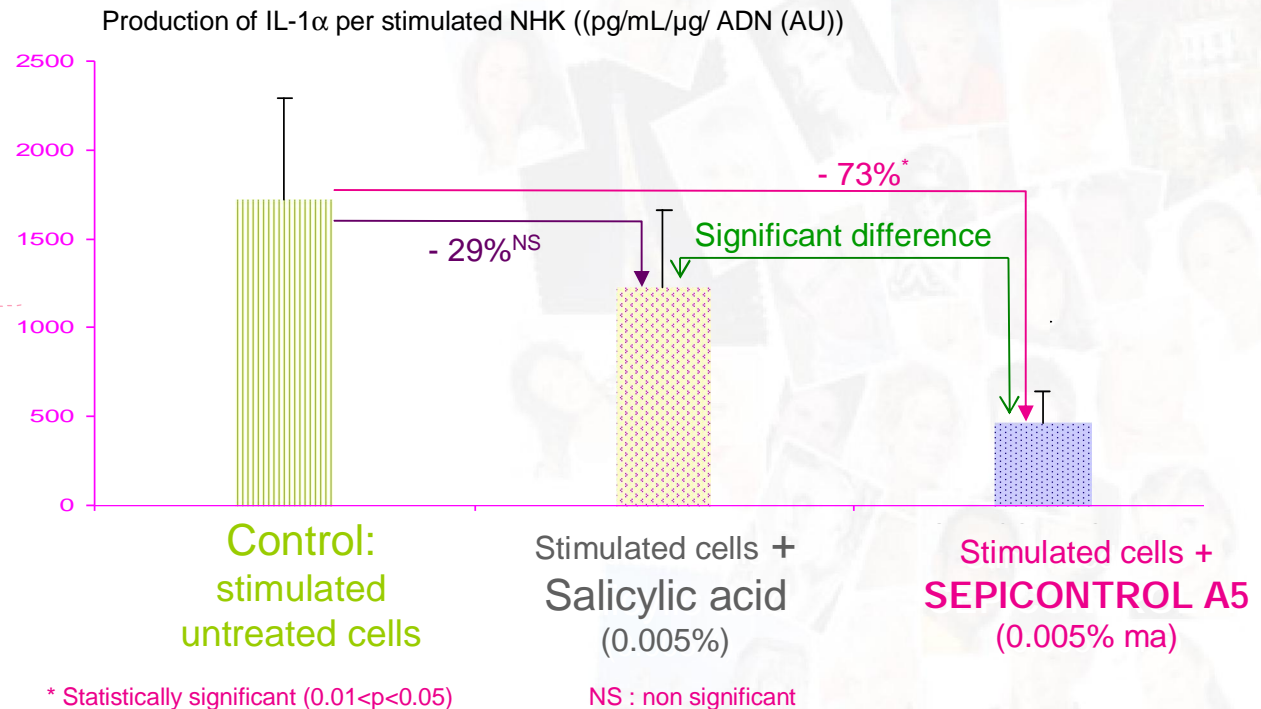
Protocol:

- ✧ Greasy acne prone skin modelling treated with SEPICONTROL A5 using *in vitro* cultures of stimulated keratinocytes (see figure 1)
- ✧ Measure of the production of IL-1 α (ELISA test) related to total number of keratinocytes in culture (ratio expressed in arbitrary units, AU)

: Regulates production of interleukine-1 α

NEW DATA

Stimulated keratinocytes,
using TLRs agonists and
calcium, show a significantly
decreased in IL-1 α secretion
after treatment with
SEPICONTROL A5



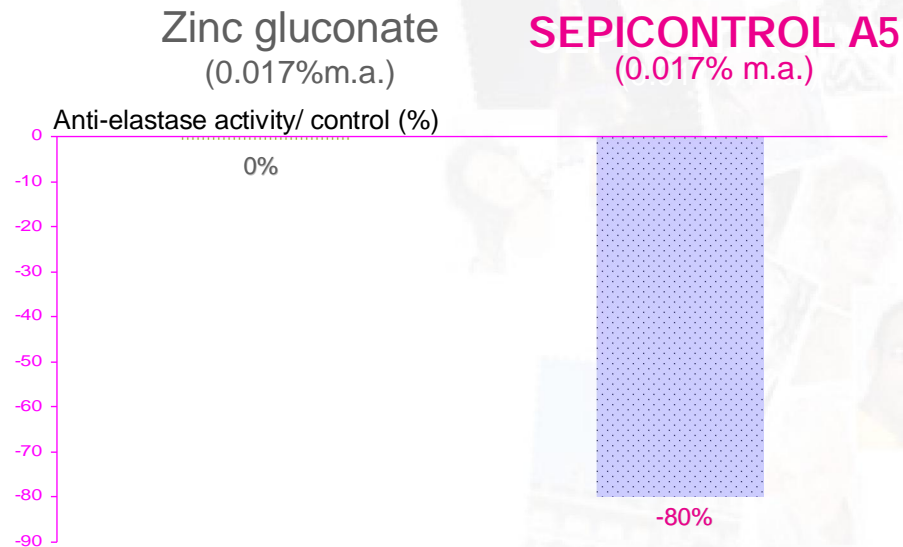
SEPICONTROL A5 fights skin inflammation by significantly reducing IL-1 α release by keratinocytes

: SEPICONTROL A5

= Anti-elastase action

= Reduces inflammation and protects the extracellular matrix

SEPICONTROL A5 presents a higher anti-elastase activity than zinc gluconate (positive reference)



Quantification of elastase inhibition by spectroscopy:

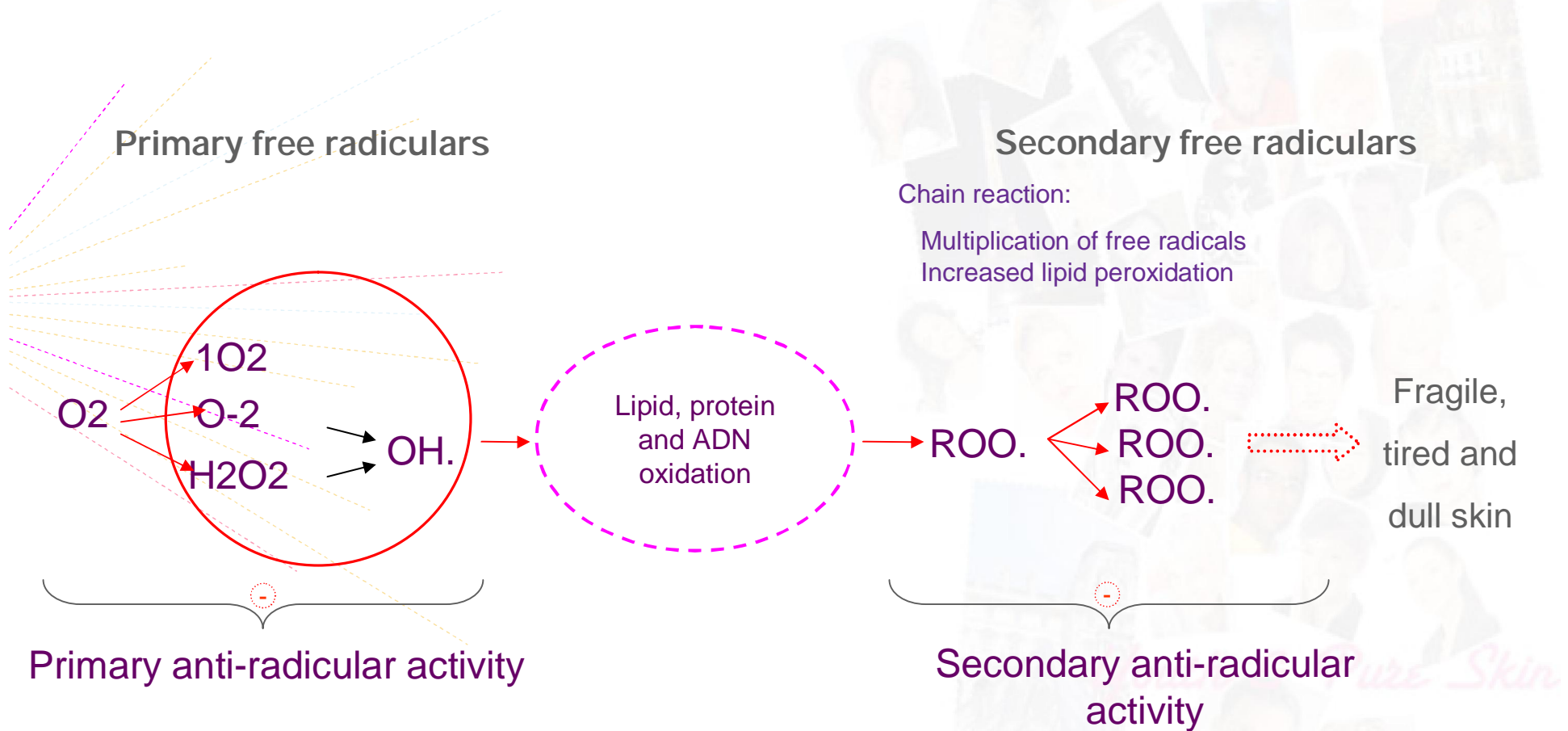
In the presence of elastase, N-methoxy succinyl – alanine – proline – valine – para-nitroanilide (a colourless substance) releases para-nitroanilide (a coloured substance)

Quantification of DO/min at 410nm: % reduced coloured substance = % anti-elastase activity

: SEPICONTROL A5

= Anti-radicular effect

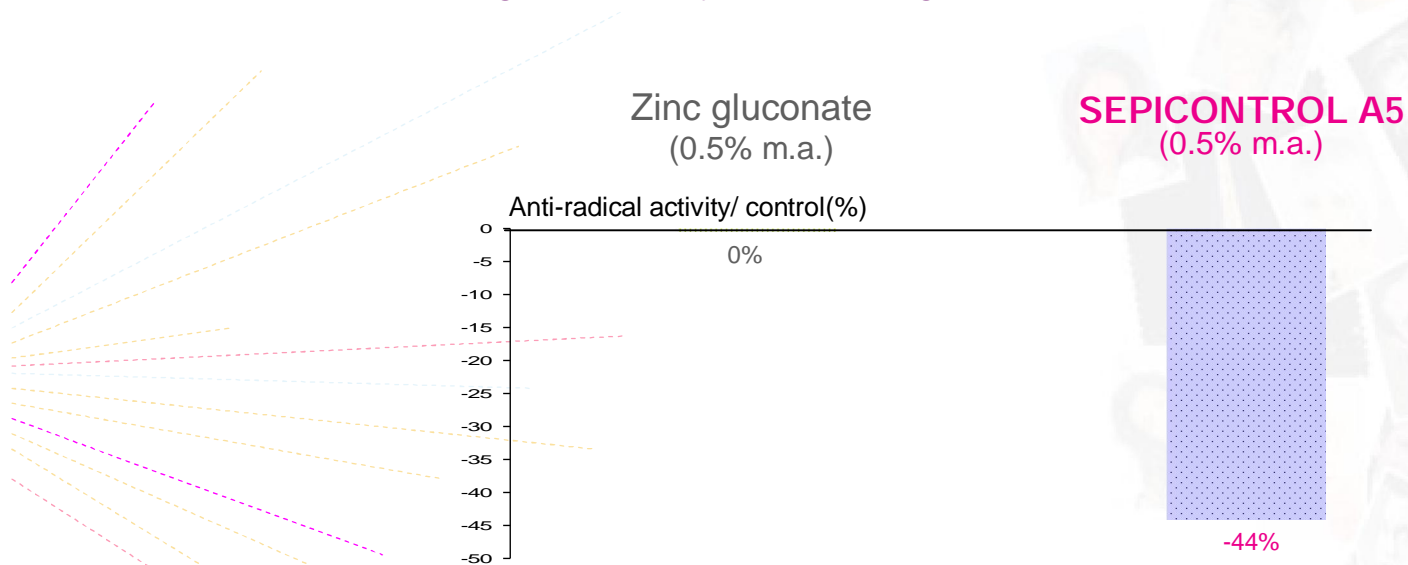
= Reinforced defences



: Primary anti-radical activity

SEPICONTROL A5 presents an anti-radical activity against superoxide anions (O_2^-)

It has a higher activity than zinc gluconate (positive reference)



Quantification of SEPICONTROL A5 anti-radical activity against superoxide anion by spectrophotometry:

Xanthine oxydase

cytochrome C oxyde (colourless)



reduced cytochrome C (coloured)

Quantification of DO/min at 550nm : % reduced coloured substance = % anti-radicular activity

[MODE OF ACTION]
in vitro tests

Ž

Controls hyperkeratinization

- Reduces the protein expression level of **filaggrin**, a keratinocyte differentiation marker

NEW DATA

Youth & Pure Skin

: SEPICONTROL A5



= Reduced hyperkeratinization-related superexpression of filaggrin

= Reduced formation of comedones

Quantification of the regulating effect of SEPICONTROL A5 on keratinocyte differentiation: quantification of filaggrin protein expression level, a keratinocyte differentiation marker

Protocol:

- ✧ Greasy acne prone skin modelling without natural stimulation of its differentiation (no calcium) using *in vitro* cultures of stimulated keratinocytes treated with SEPICONTROL A5 (figure 1)
- ✧ Quantification of filaggrin (immunomarking) compared to total number of keratinocytes in cultures (ratio expressed in arbitrary units, AU)

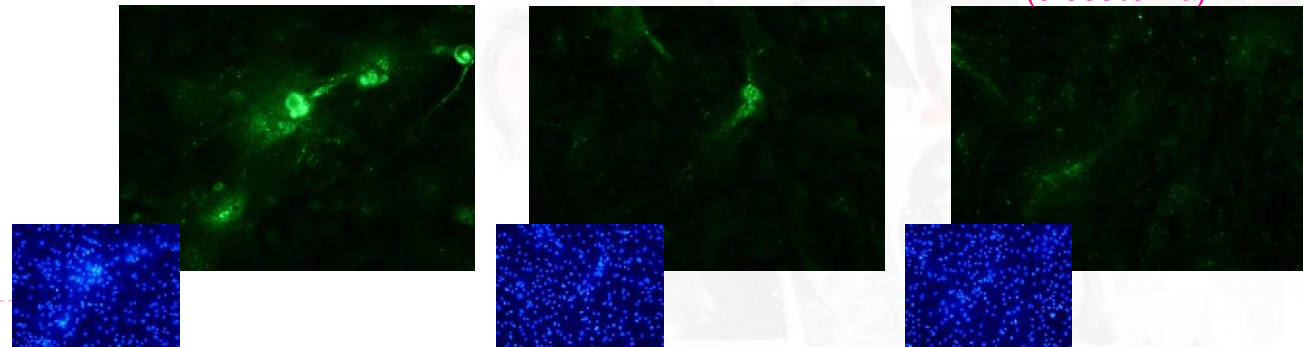
: Reduced protein expression level of **FILAGGRIN**

NEW DATA

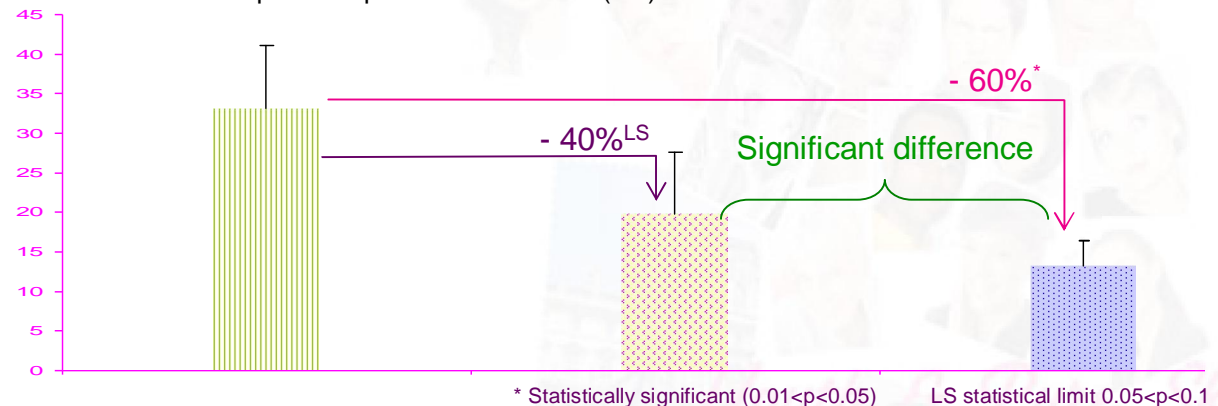
Control:
stimulated
untreated cells

Stimulated cells +
Salicylic acid
(0.005% ma)

Stimulated cells +
SEPICONTROL A5
(0.005% ma)



FILAGGRIN expression per stimulated NHK (UA)



SEPICONTROL A5 maintains balanced differentiation in *in vitro* stimulated keratinocyte cultures, representing a modelling tool of a greasy acne prone skin treated with SEPICONTROL A5

[MODE OF ACTION]

in vitro tests

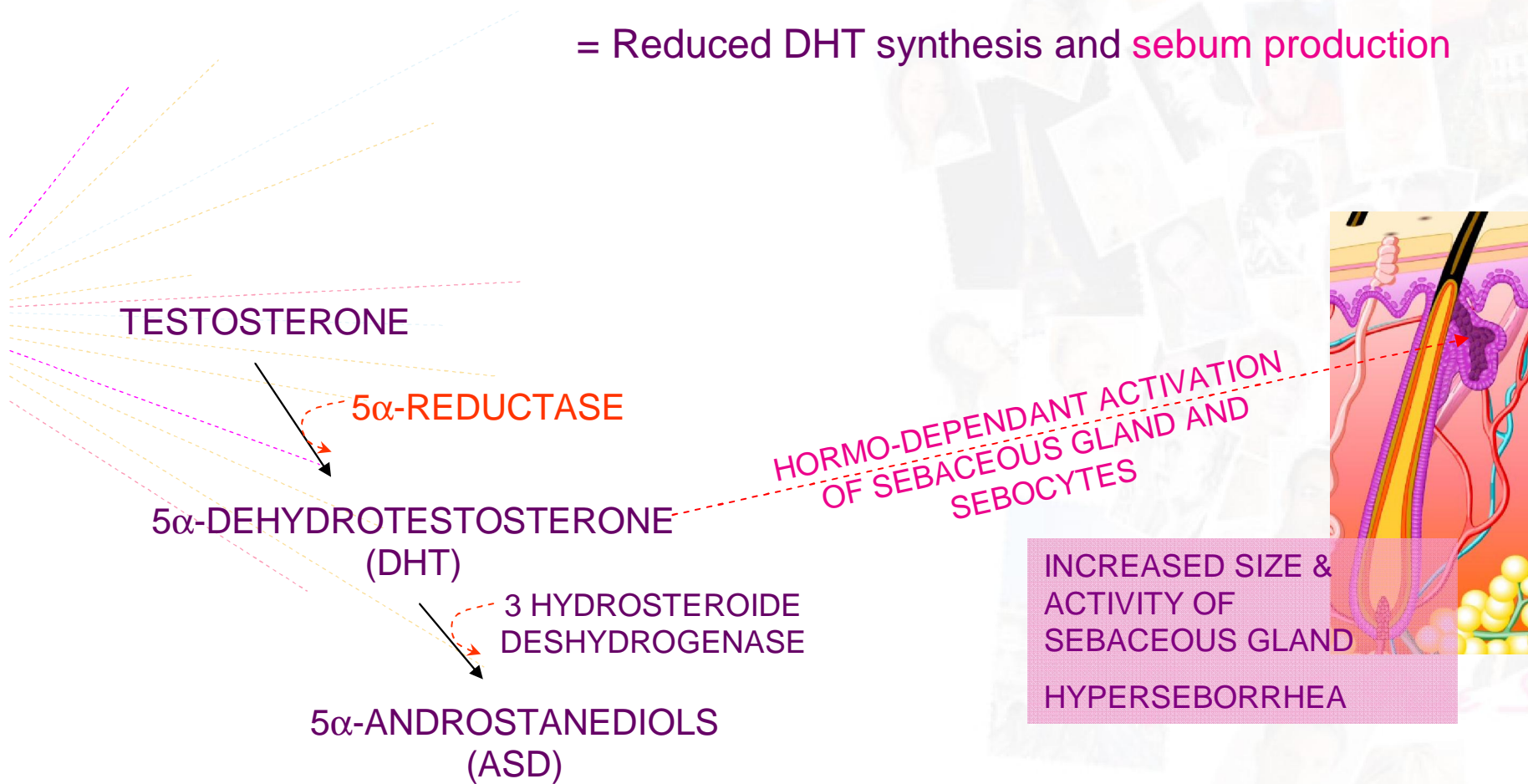
Antiseborrheic activity

- ✧ anti 5 α - reductase activity

: SEPICONTROL A5

= Anti 5α -reductase activity

= Reduced DHT synthesis and sebum production



: Anti 5 α -reductase activity

Action significantly higher than that of zinc gluconate (positive reference)

SEPICONTROL A5

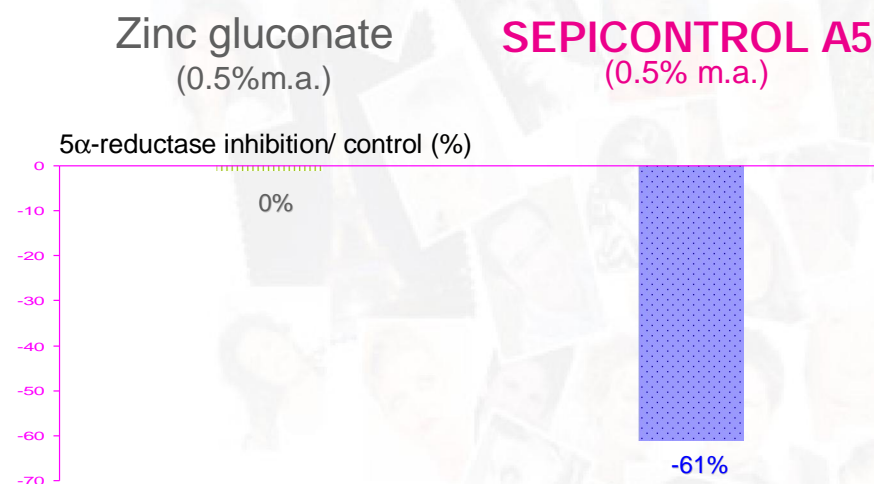
presents excellent

anti 5 α -reductase

properties on dermal fibroblasts

and compared to finasteride

(reference molecule)



Control
(no active
ingredient)

0%

Finasteride
(30ng/mL m.a.)

35%*

SEPICONTROL A5
(0.1% m.a.)

40%*

* Statistically significant(0.01<p<0.1)

[MODE OF ACTION]

in vitro tests

• Controls the production of peroxidable free fatty acids

✧ Anti-lipase activity

- CONTROLS THE PROLIFERATION OF PEROXIDABLE FREE FATTY ACIDS

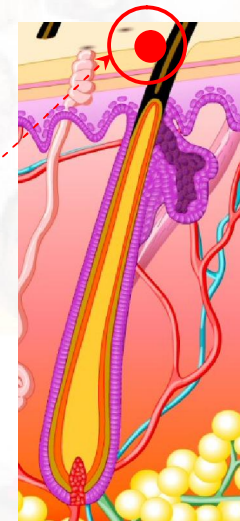
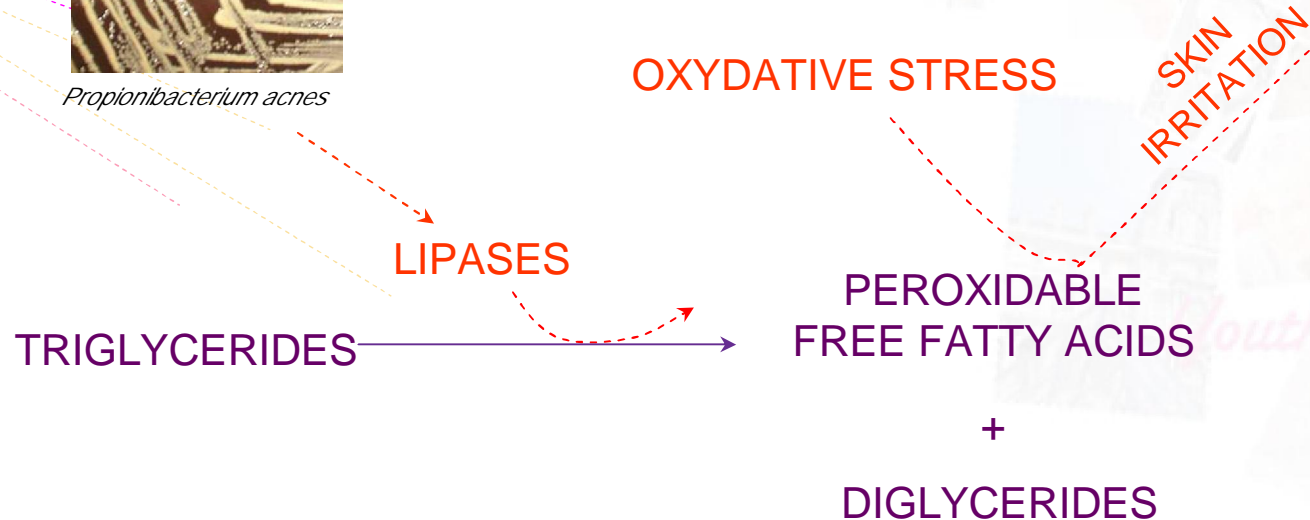
SEPICONTROL A5

= Anti-lipase action

= Reduces the formation of peroxidable free fatty acids, and thus controls skin reaction and irritation



Propionibacterium acnes



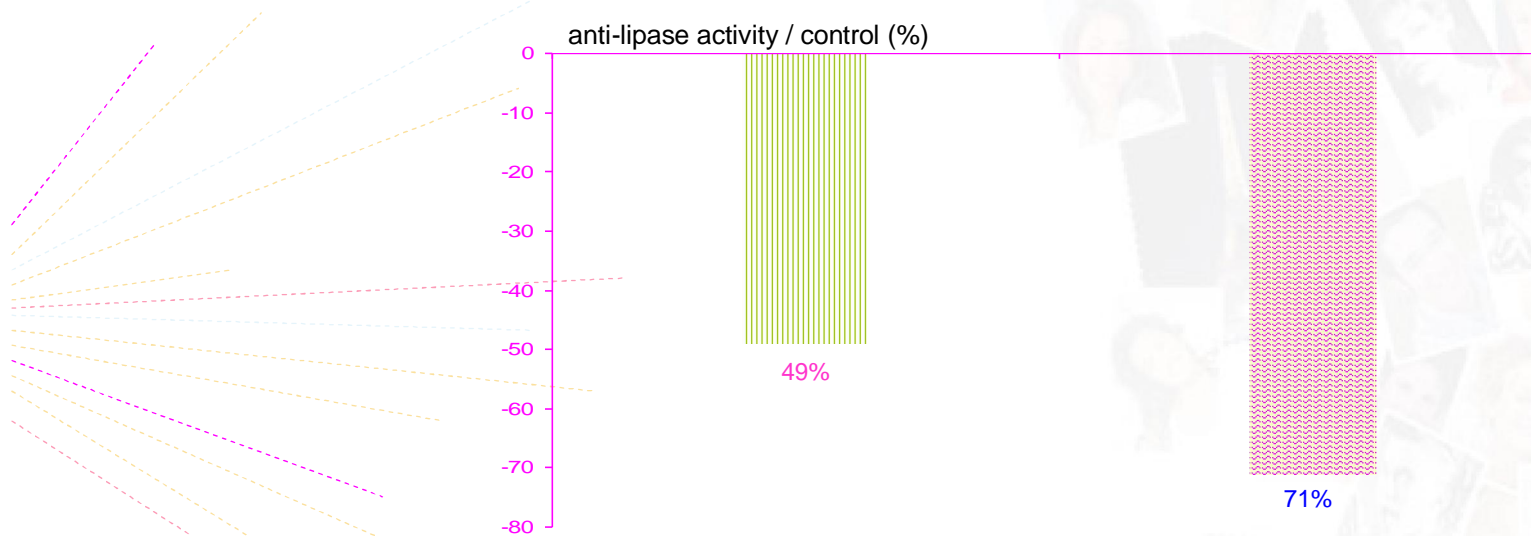
: Anti-lipase action

zinc gluconate (positive reference)

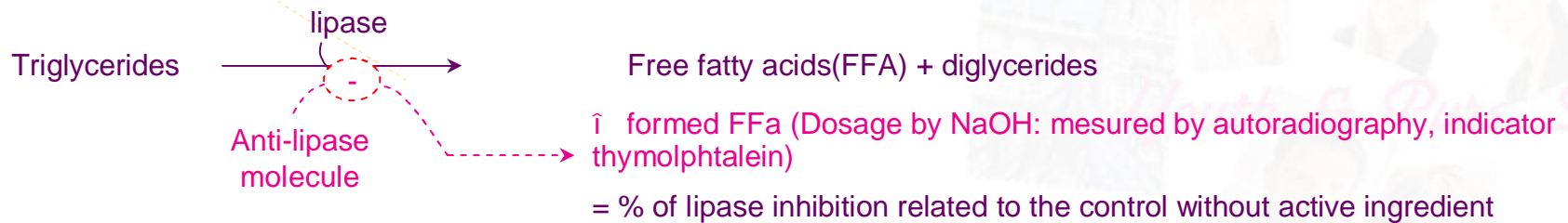
Superior to

Zinc gluconate
(1% m.a.)

SEPICONTROL A5
(1% m.a.)



Quantification of free fatty acids



Usage dose: 4%

Formulation: all products for which a sebo regulating and/or comedolytic effect is sought

- ✧ Skincare for oily acne prone skin
- ✧ Skincare for oily and combination skin
- ✧ Hypoallergenic products
- ✧ Sensitive skin products

Youth & Pure Skin

Nota

The analytical specifications warranted are only those mentioned on the certificate of analysis supplied with each delivery of the product.

Except as set forth above, SEPPIC* makes no warranties, whether express, implied or statutory, as to the product which is the subject of this document. Without limiting the generality of the foregoing, SEPPIC* makes no warranty of merchantability of the product or of the fitness of the product for any particular purpose. Buyer assumes all risk and liability resulting from the use or sale of the product, whether singly or in combination with other goods. The information set forth herein is furnished free of charge and is based on technical data that SEPPIC* believes to be reliable. It is intended for use by persons having technical skill and at their own discretion and risk. Since conditions of use are outside SEPPIC*'s control, SEPPIC* makes no warranties, express or implied, and assumes no liability in connection with any use of this information. Nothing herein is to be taken as a license to operate under or a recommendation to infringe any patents.

*** SEPPIC being:**

SEPPIC S.A.
22 Terrasse Bellini
Paris La Défense
92806 Puteaux Cedex FRANCE
Tel. : +33 (0) 1 42 91 40 00
Fax : +33 (0) 1 42 91 41 41

Head Office
75, quai d'Orsay
75007 PARIS
FRANCE

SEPPIC Brasil
Especialidades Químicas
Comércio e Importação Ltda
Rua Líbero Badaró, 182
State SP – SAO
BRAZIL
Tel. : +55 11 3242 3911
Fax : +55 11 3105 8605

And, depending on the country:

SEPPIC UK Ltd
50 Salisbury Road
PO Box 338 - Hounslow
TW4 6SH - ENGLAND
Tel. : +44 208 577 8800
Fax : +44 208 570 2106

SEPPIC Inc.
30, Two Bridges Road, suite 210
Fairfield, New Jersey 07004-1530
USA
Tel. : +1 973 882 5597
Fax : +1 973 882 5178

SEPPIC GmbH
Von-der-Wettern-STR.27
51149 Köln
GERMANY
Tel. : +49 (0) 2203 898 3020
Fax : +49 (0) 2203 898 3099

SEPPIC ITALIA Srl
Via Quarenghi 27
20151 Milano
ITALY
Tel. : +39 02 38009110
Fax : +39 02 38009140

SEPPIC China
Room 510 Jin Tai Building
58 South Mao Ming Road
Shanghai 200020 CHINA

Tel. : +86 (21) 64 66 01 49
Fax : +86 (21) 64 66 11 09

SEPPIC Asia Singapore
120 Lower Delta Road # 13 -11
Cendex Centre
Singapore 169208
SINGAPORE
Tel. : +65 6278 6711
Fax : +65 6278 8193

www.seppic.com

A subsidiary of the AIR LIQUIDE group