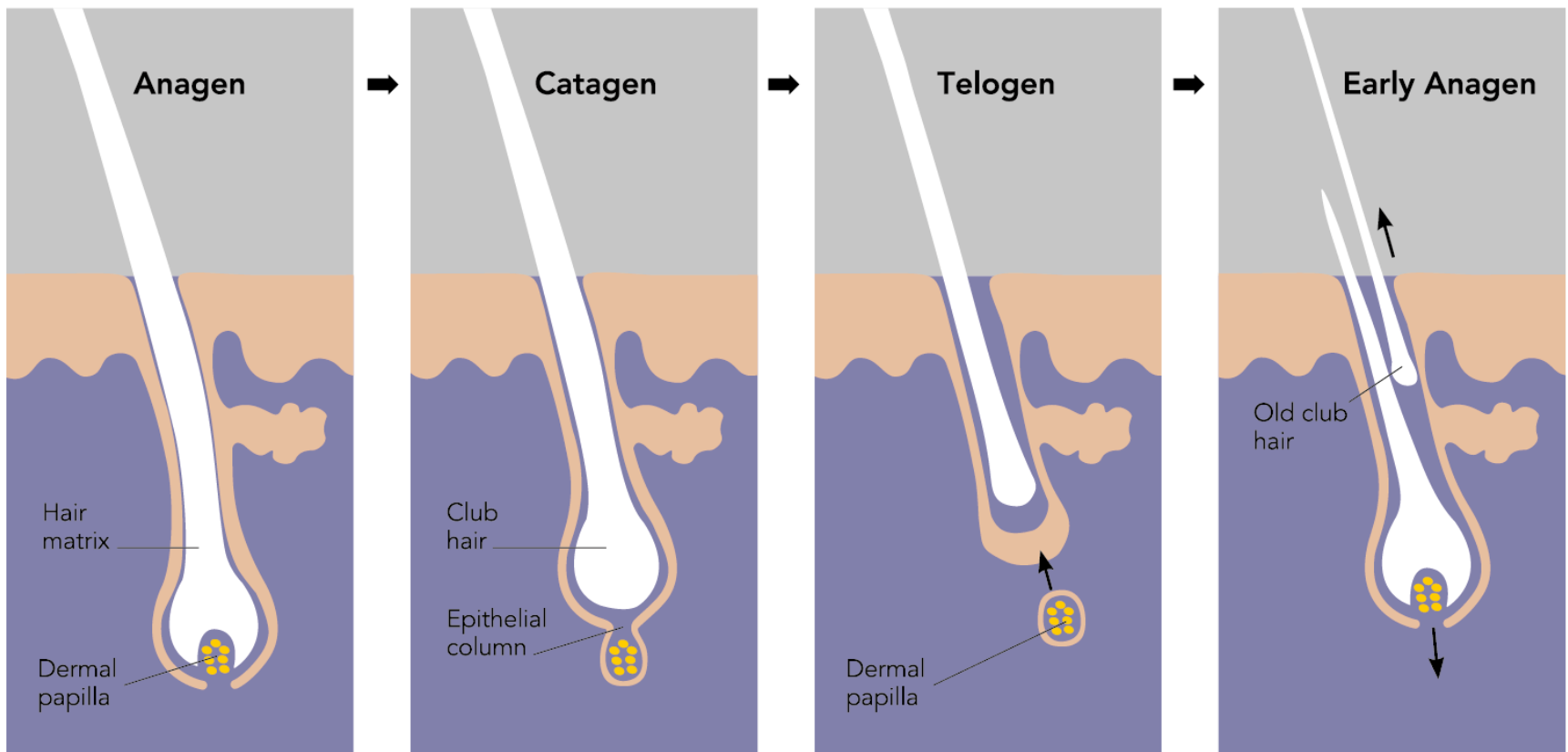




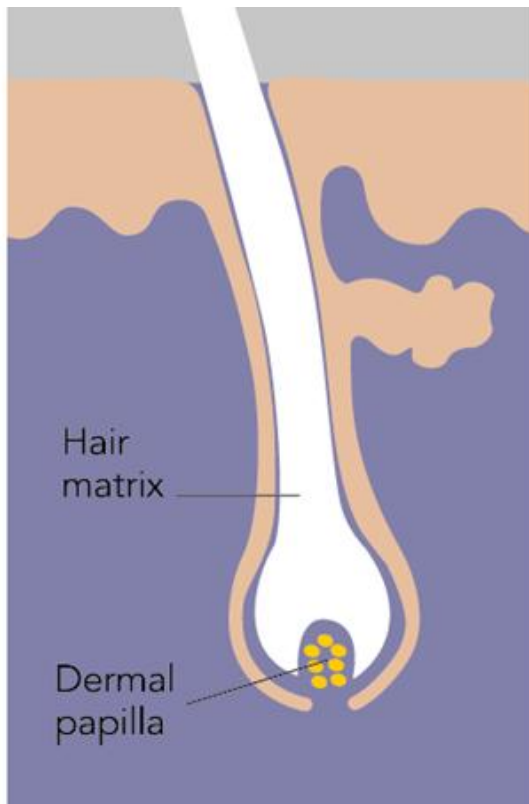
AnaGain™

Stimulating hair growth and fighting hair loss

# The Hair Growth Cycle



# The Dermal Papilla Controls Hair Follicle Development and Growth



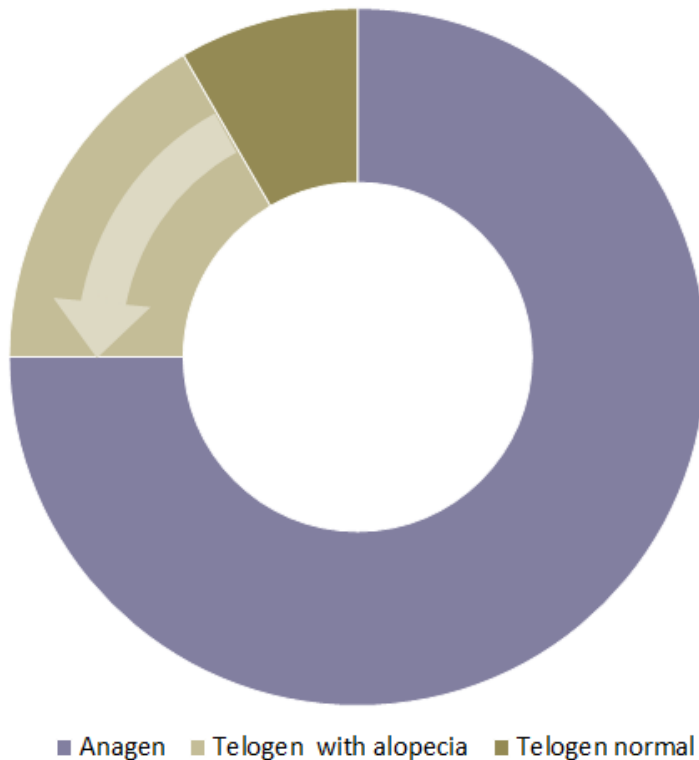
## **The hair matrix** (epidermal cells)

- is one of the most rapidly proliferating tissues in the human body

## **The dermal papilla** (specialized dermal cells)

- plays a major role in hair follicle development and growth
- controls the switch from telogen to anagen phase
- instructs the surrounding epithelial cells (hair matrix) to proliferate, move upward and differentiate into the multiple cell types (hair shaft, root sheaths)

# Hair Loss has Several Causes



- In people with normal hair cycle 85 - 90% of hair is in the anagen phase and 10 -15% of hair in the telogen phase
- Hair loss (alopecia): imbalance of hair growth cycle → too many hair remain in the telogen phase
- Causes: several factors (androgen metabolism, genetics, stress)
- Men and women are affected: 50% of men and 25% of women > 50 years

# The Pea Plant

## *Pisum Sativum*



- Annual plant with pod fruits
- Peas have both low-growing and vining cultivars
- The vining cultivars grow thin tendrils from leaves that coil around any available support and can climb to be 1–2 m high

# The Pea



- Pea = small spherical seed / seed-pod of the plant *Pisum sativum*
- Each pod contains several peas
- Peas belong to the pulses and and thus to the familiy of *fabaceae*
- Peas are rich in proteins, starch and fibres



# Pea Sprouts



- Sprouts are particularly vulnerable since they are not lignified
- Sprouts have thus the highest amount of secondary plant metabolites (“health promoting chemicals”)
- They protect the plant from
  - diseases
  - damage
  - pathogens
  - extreme UV
  - pollutants
  - herbivores

# AnaGain™

## Composition

Pisum sativum sprout extract (fresh sprouts, organic) extracted with water	15%
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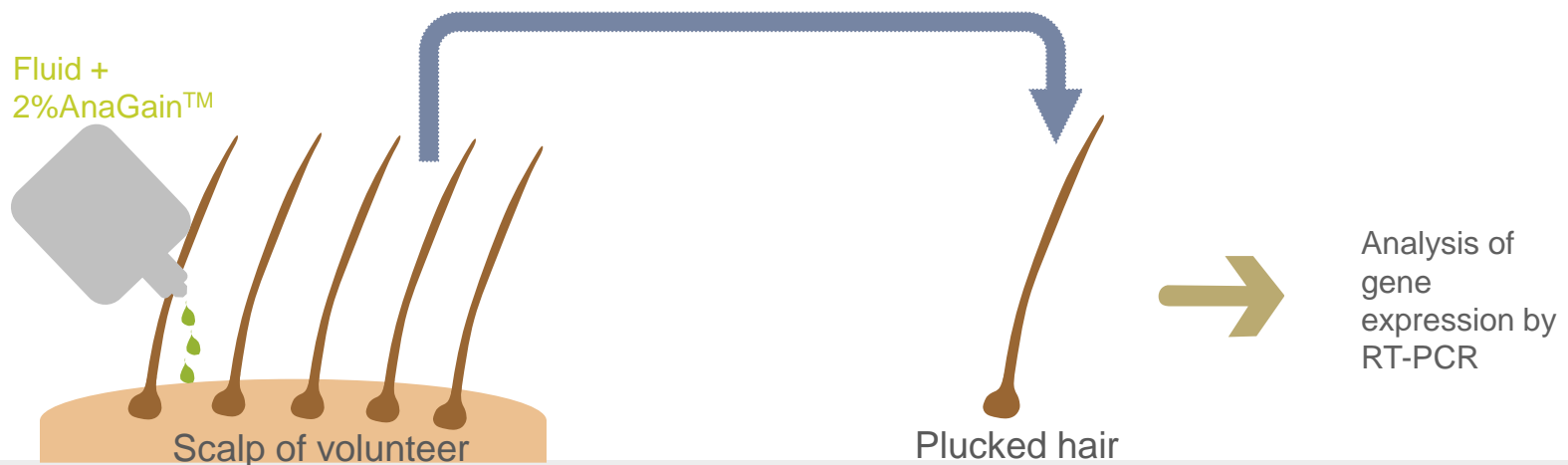
### INCI/CTFA

Pisum Sativum Sprout Extract (and) Phenoxyethanol (and) Sodium Benzoate  
(and) Aqua/Water



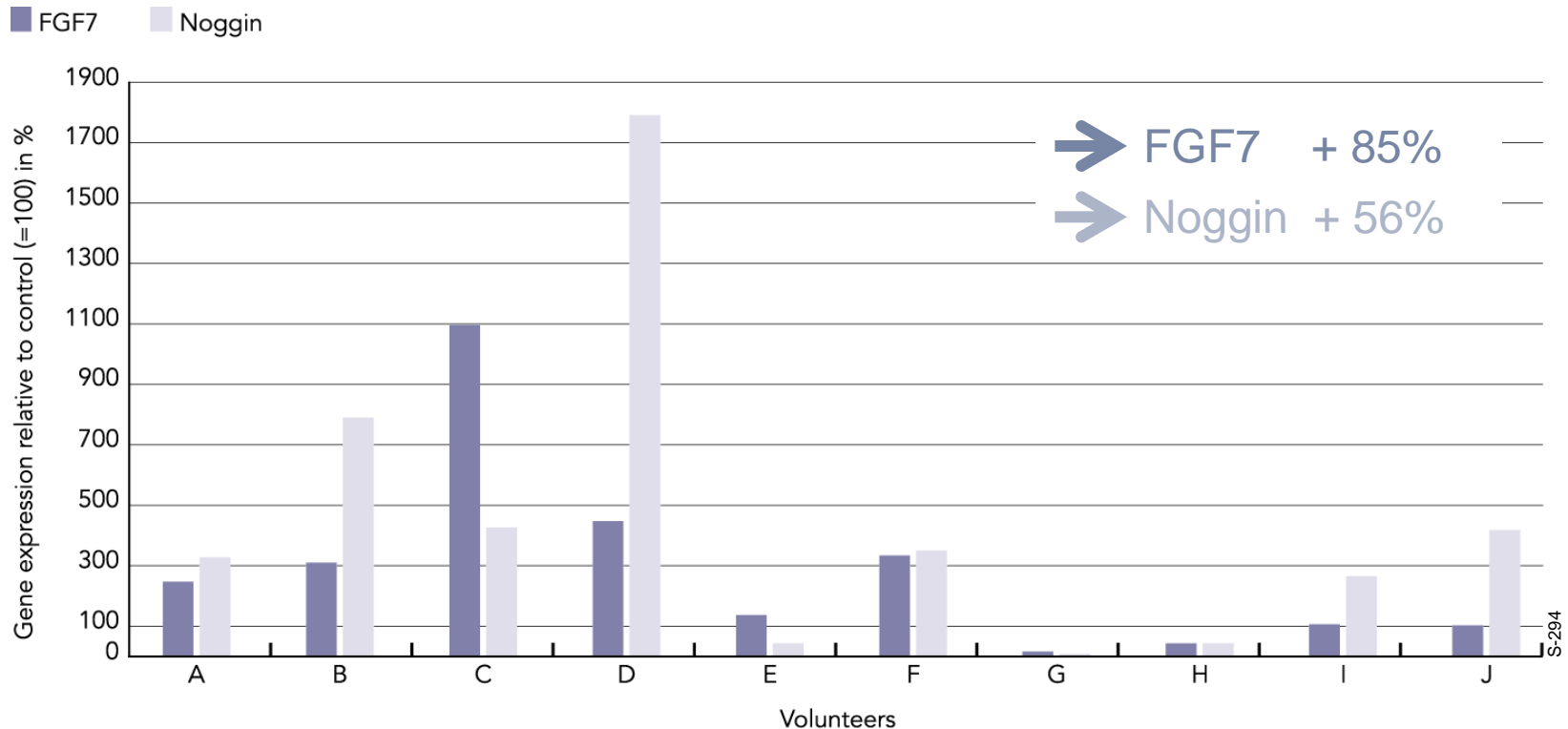
# Effect on Gene Expression in Volunteers from 46 – 60 y

- 10 volunteers (4 f, 6 m) applied a hair fluid with 2% AnaGain™ twice daily on a defined scalp zone during 14 days
- Hairs were plucked from the occipital area of the head before and after the treatment
- The expression of genes important in hair physiology was analyzed by RT-qPCR



S-294

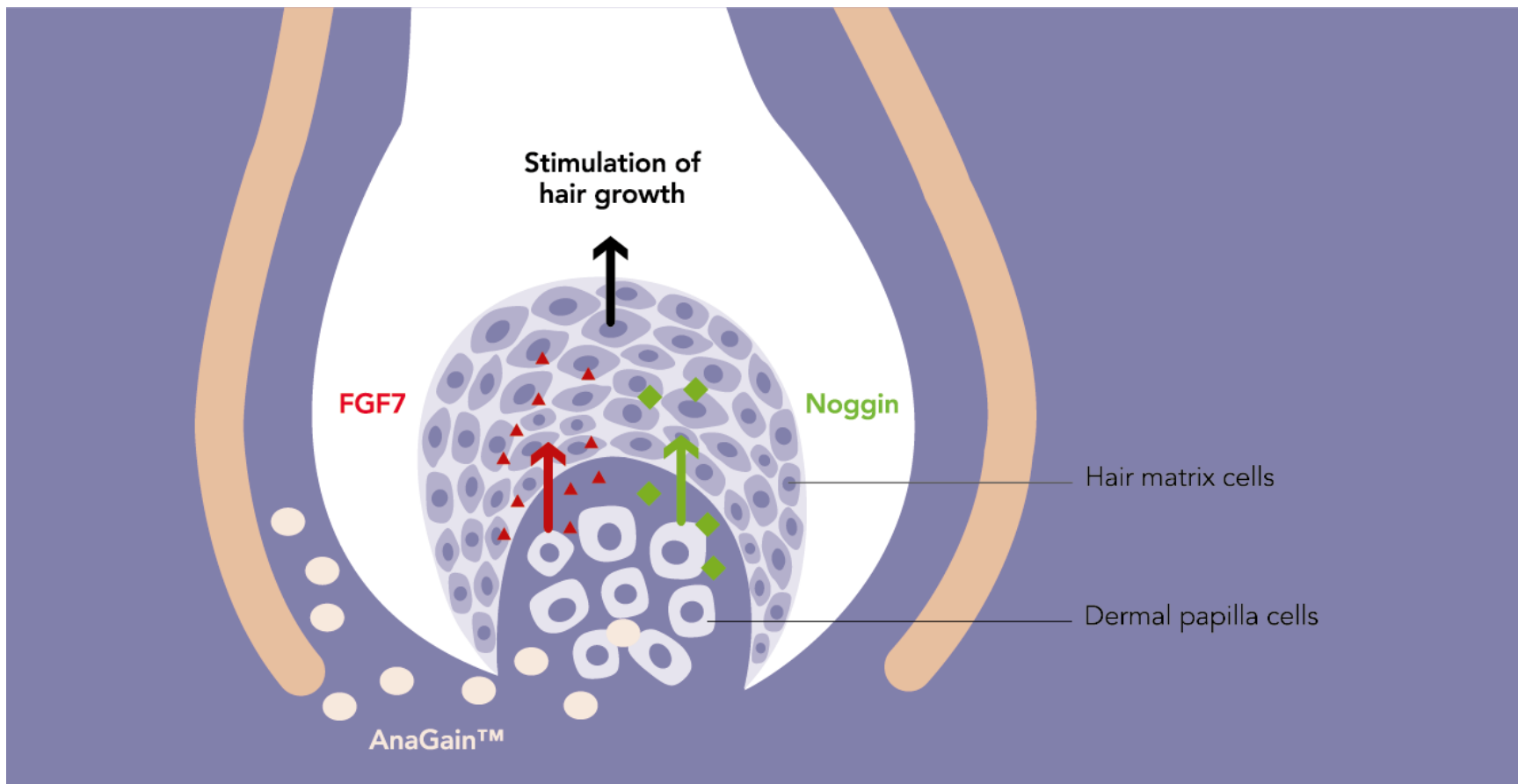
# Results of Gene Expression Analysis



**FGF7** Fibroblast growth factor-7, promotes proliferation activity of matrix keratinocytes at the beginning of a new anagen phase

**Noggin** Shortens the telogen phase  
 ➔ AnaGain™ can stimulate the dermal papilla to induce the growth of new hair

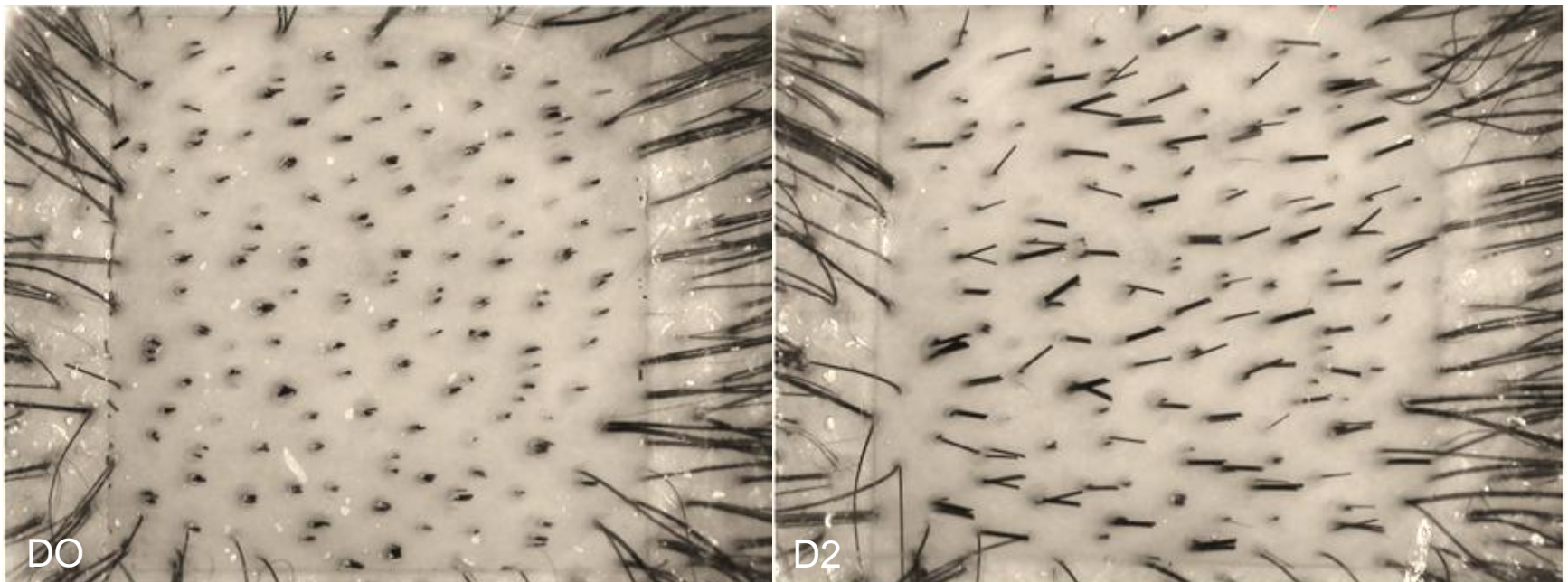
# Mechanism of AnaGain



# Phototrichogram Technique

## PRINCIPLE

Realisation of photographs with the EPIFLASH system of a shaved zone of the scalp at the beginning and two days after the shaving. Analysis of the picture with the software count'hair® to count the anagen and the telogen hair.

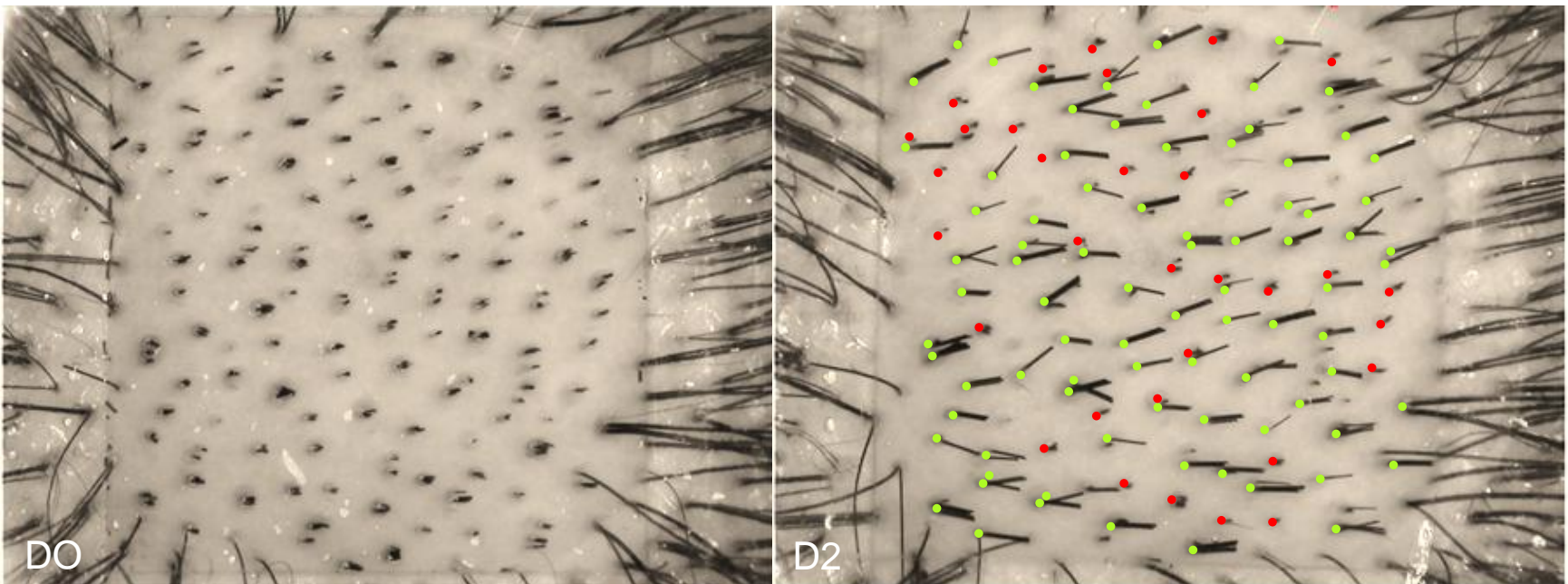


# Phototrichogram Technique

## PRINCIPLE

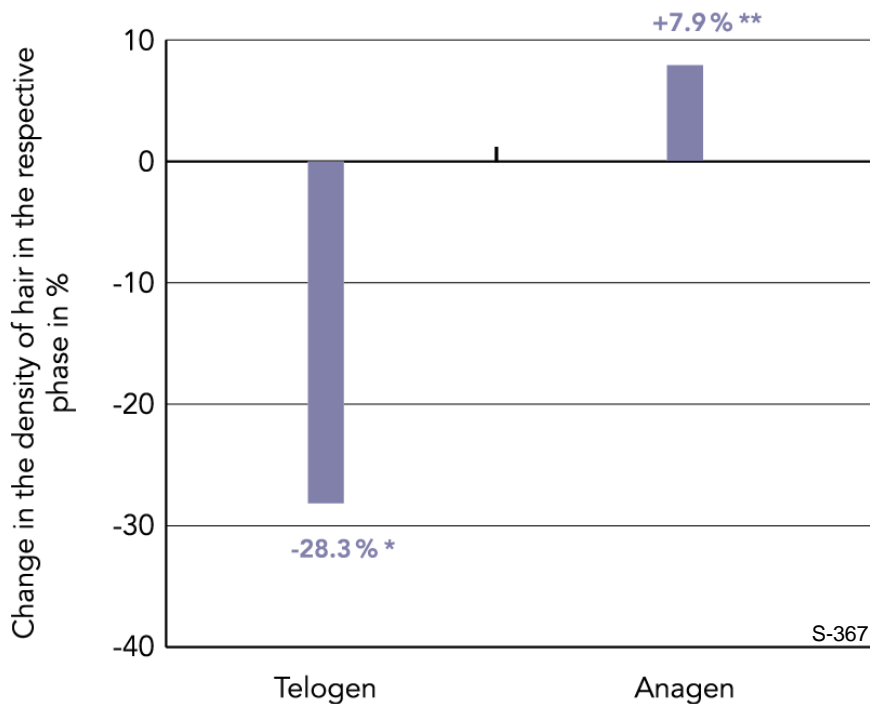
Realisation of photographs with the EPIFLASH system of a shaved zone of the scalp at the beginning and two days after the shaving. Analysis of the picture with the software count'hair® to count the anagen and the telogen hair.

● anagen hair ● telogen hair



# Anti-Hair Loss Effect and Hair Growth Reactivation 1

■ 4% AnaGain™



\*p=0.001 versus initial conditions

\*\*p=0.002 versus initial conditions

Test product: Gel with 4% AnaGain™

Test area: Scalp

Volunteers: 17 women, 3 men (21-37y; mean 26) with telogen hair  $\geq 15\%$  for women and  $\geq 20\%$  for men

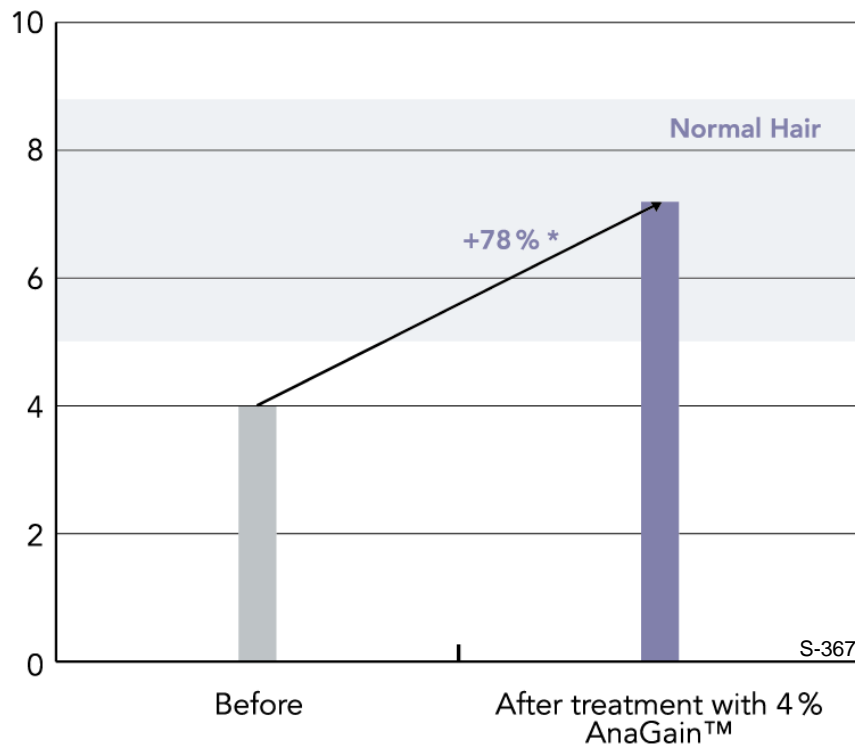
Product application: twice a day for 3 months

Measurements: Phototrichogram technique (vertex area)



AnaGain™ can reactivate hair growth by reducing amount of hair in telogen hair phase and stimulating anagen hair

# Anti-Hair Loss Effect and Hair Growth Reactivation 2



\*p=0.001 versus initial conditions

A/T ratio (growth coefficient)

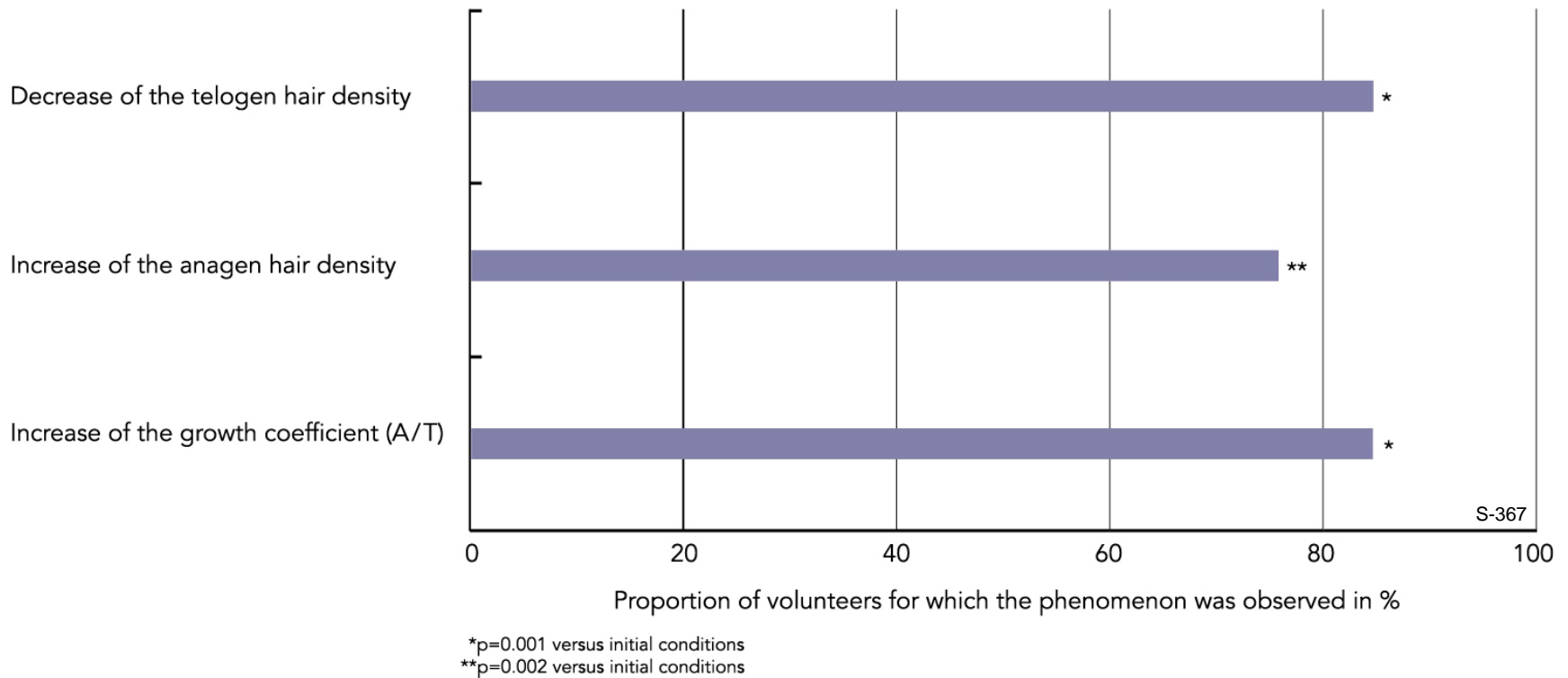
- Ratio of number of anagen hairs to the number of telogen hairs
- Measure for the proportion of active hair follicles
- $A/T < 5 \rightarrow$  hair loss problem



AnaGain™ restores hair regeneration by 78% to a normal level ( $A/T = 7.2$ )



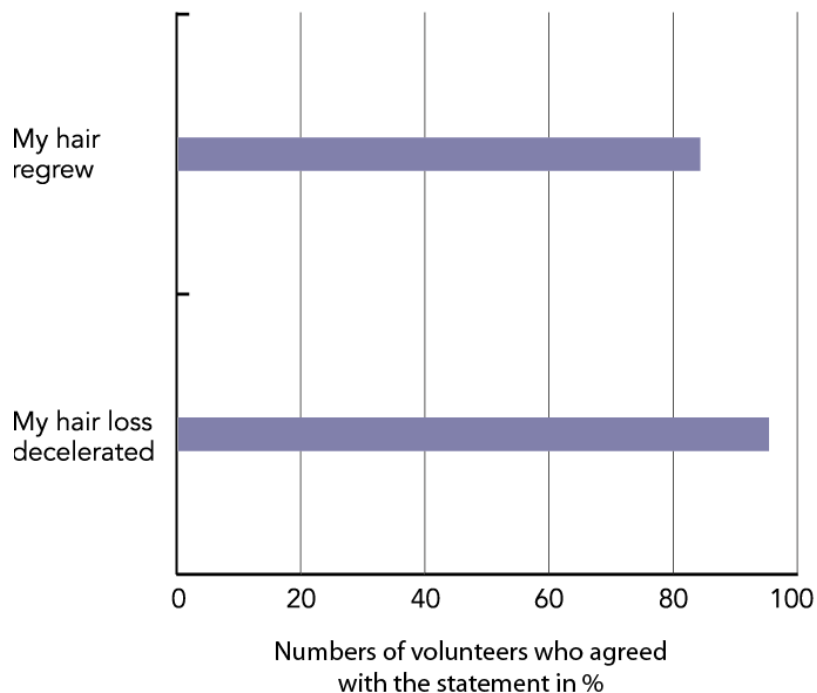
# Anti-Hair Loss Effect and Hair Growth Reactivation 3



→ Anti-hair loss effect of AnaGain™ in a large part of the panel

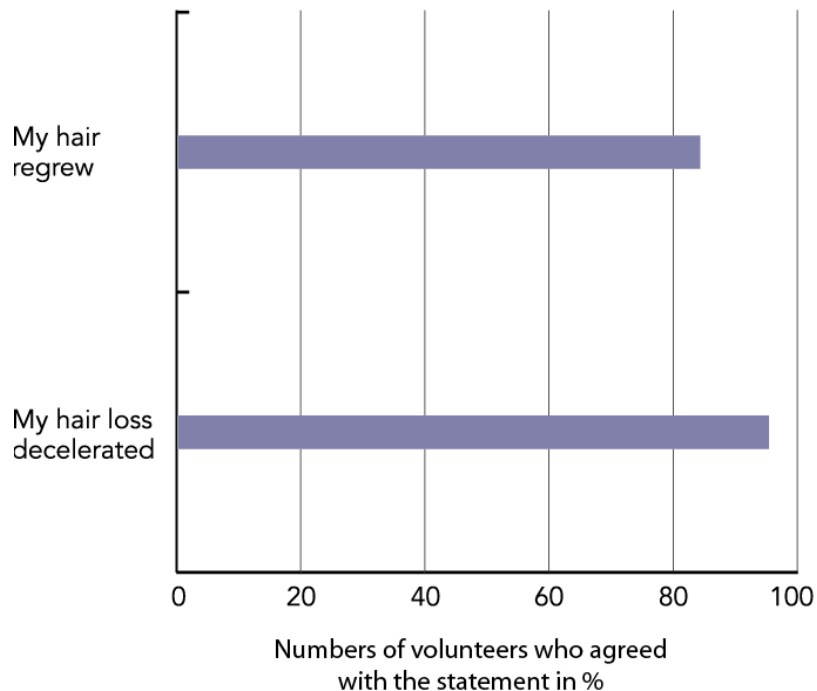
# Anti-Hair Loss Effect and Hair Growth Reactivation 4 (Questionnaire)

■ 4 % AnaGain™

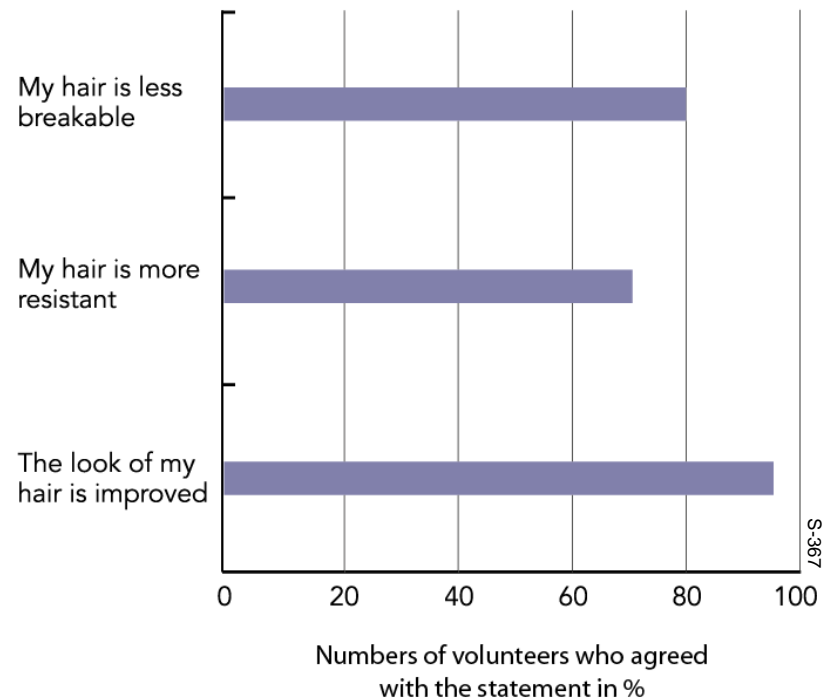


# Anti-Hair Loss Effect and Hair Growth Reactivation 4 (Questionnaire)

■ 4 % AnaGain™



■ 4 % AnaGain™



# AnaGain™ Claim Ideas



- Stimulates hair growth at the root
- Prolongs the life cycle of hair
- Fully restores the vitality of the hair
- For denser hair in just 3 months

# AnaGain™ Applications



- Anti-hair loss, hair-regrowth formulations
- Anti-aging hair care products
- Tonics, serums, conditioners, masks, shampoos

# AnaGain™

## Marketing Benefits



- In vivo proven on women and men
- Organic source of the plant