



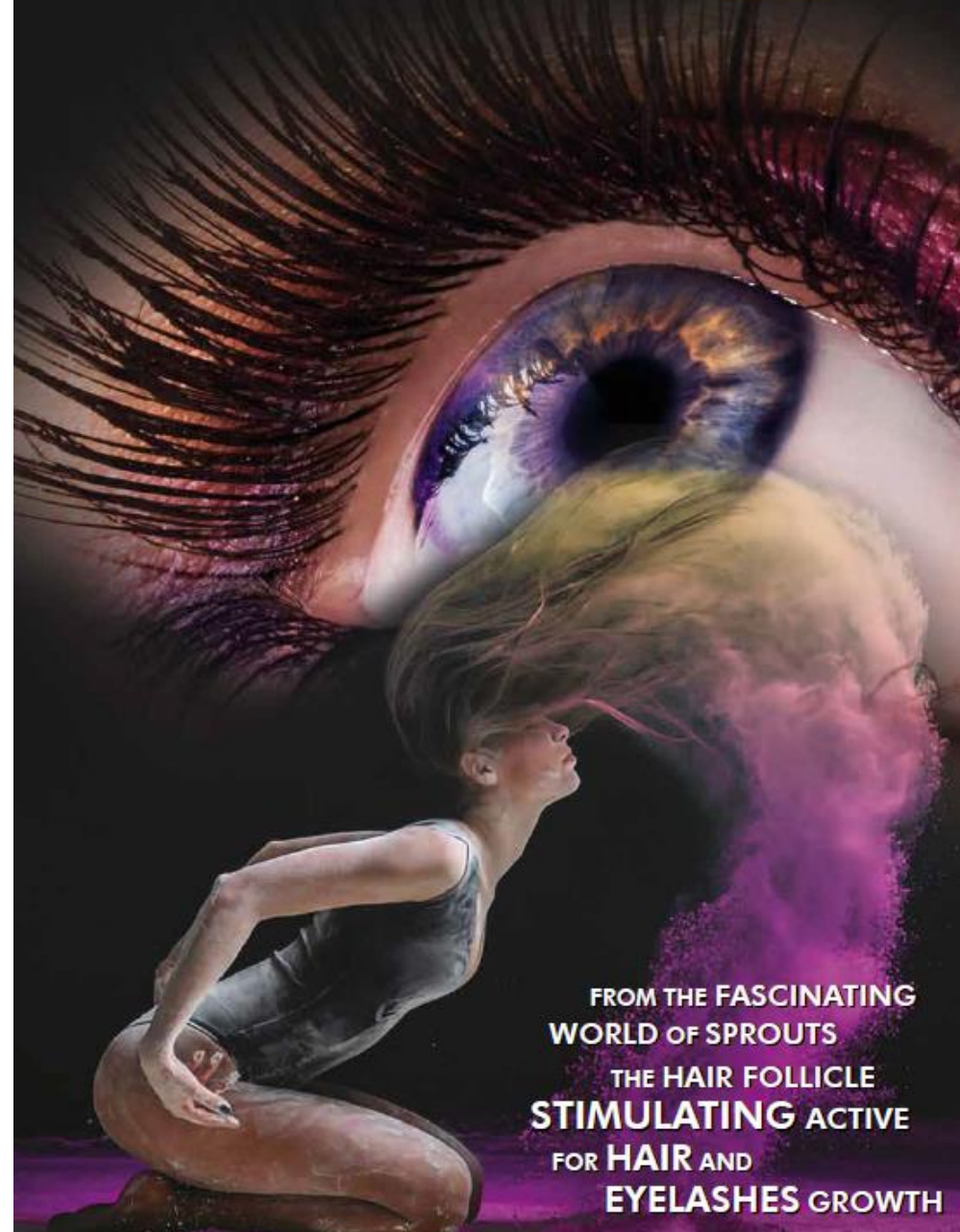
AKOSKY™ AZUKI

Hair and Eyelash Growth Stimulation
with Red Clover and
Mung Bean Fresh Sprouts

AkottBrandConcepts™



AKOSKY™ AZUKI

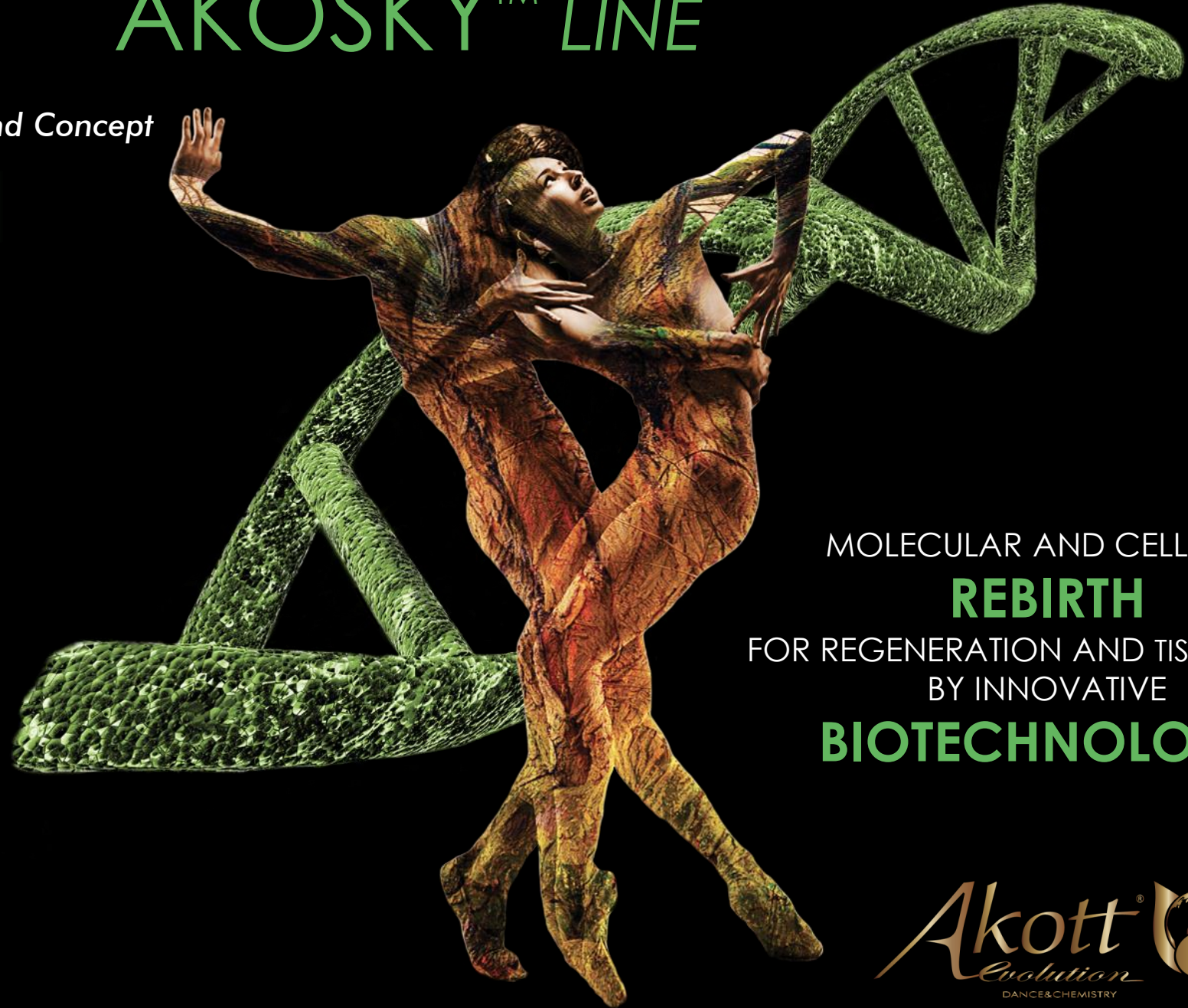


FROM THE FASCINATING
WORLD OF SPROUTS
THE HAIR FOLLICLE
STIMULATING ACTIVE
FOR HAIR AND
EYELASHES GROWTH

AKOSKY™ LINE

The *SkinArtNature™* Brand Concept
CELLREBIRTH™

FROM THE DANCING
MOLECULES
THE **KINETIC MOVEMENT
OF NATURE** FOR
MULTIFUNCTIONAL &
POWERFUL ACTIVES



MOLECULAR AND CELLULAR
REBIRTH
FOR REGENERATION AND TISSUE REPAIR
BY INNOVATIVE
BIOTECHNOLOGY

Akott®
Evolution
DANCE & CHEMISTRY

HAIR LOSS

CAUSES:

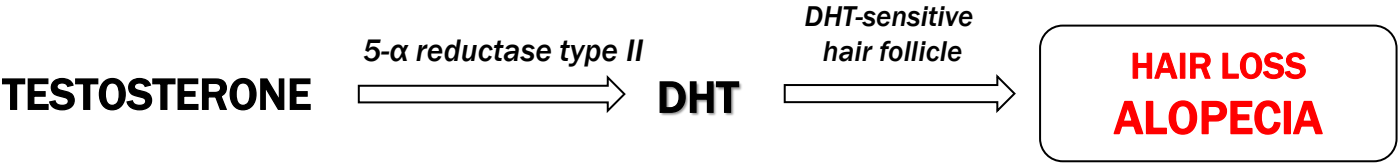
- Genetics, age, stress
- Hormonal imbalance, diseases, medications
- Dry scalp, excess of sebum, inflammation

Hair loss has serious psychological and emotional consequences, such as loss of self-esteem, depression, and anxiety



HAIR LOSS – ANDROGENIC ALOPECIA

Androgenetic Alopecia (known as Male-Pattern Hair Loss or MPHL) is due to a combination of genetics and an excess of the male hormone dihydrotestosterone (DHT). Hair follicles can be sensitive to the presence of DHT, which decreases the vitality of the hair follicle stem cells causing the miniaturization of the follicle and the loss of hair.



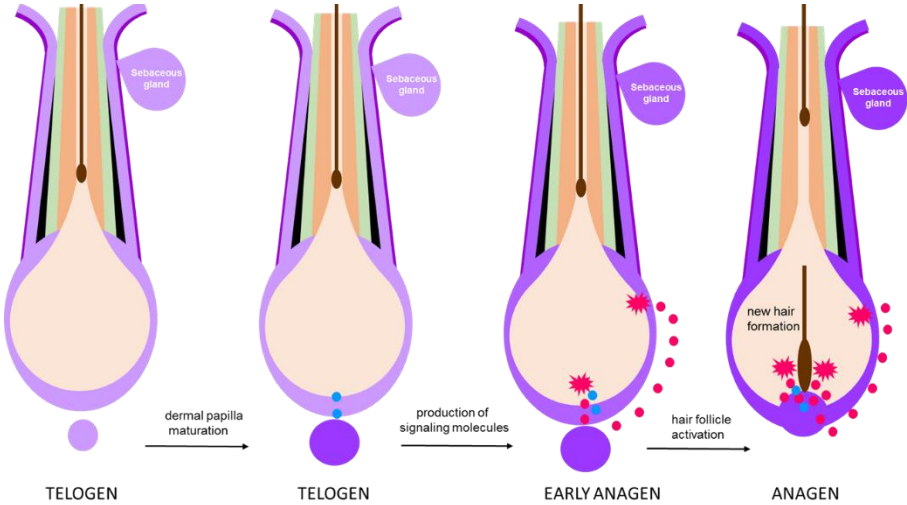
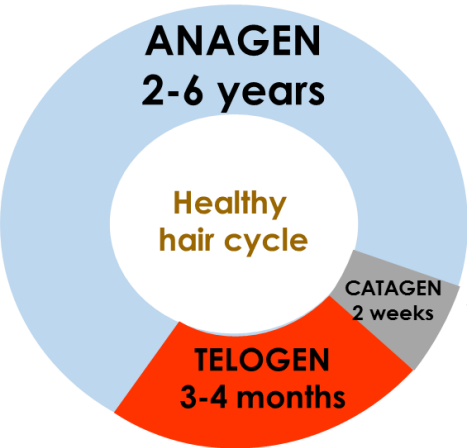
The most common claim for anti-hair loss cosmetic products available on the market is the inhibition of 5- α -reductase, but this is not correct. They all enhance the local blood flow, instead.



HAIR FOLLICLE CYCLE

The hair follicle cycle regulates the hair growth and presents 3 phases:

- The **ANAGEN** (or growing) phase: the dermal papilla provides the necessary oxygen and nutrients and the new hair is continuously formed by the hair follicle stem cells. Duration: 2 to 6 yrs.
- The **CATAGEN** (or transition) phase: the hair follicle switches from the anagen to the telogen phase. Duration: about 2 weeks.
- The **TELOGEN** (or resting) phase: the dermal papilla is not connected to the bulge of the follicle and the hair does not grow. This phase allows to preserve the hair follicle stem cells storage and to promote the dermal papilla maturation. Duration: 3 to 4 months.



HEALTHY SPROUTS

- 🌱 A sprout is a shoot that emerges from a recently germinated seed and is the **BEGINNING** of the **LIFE CYCLE** of the plant
- 🌱 Sprouts are a **POTENT SOURCE OF ACTIVE MOLECULES** since, during sprouting, a substantial increase of secondary metabolites is observed
- 🌱 It is known that in sprouts free radical **SCAVENGING, ANTIOXIDANT** properties, and **UV LIGHT PROTECTION** are improved

SPROUTS ARE ONE OF THE
RICHEST SOURCES
OF SECONDARY METABOLITES
FROM PLANT ORIGIN



TECHNOLOGY – Production Process

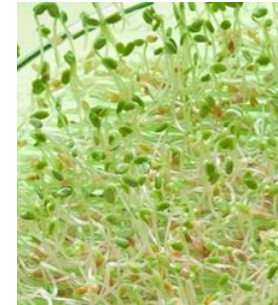


Trifolium pratense and *Vigna radiata* **Seeds**



Mung beans

Sprouting



Trifolium pratense and *Vigna radiata* **Sprouts**

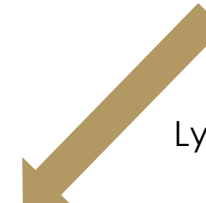


Extraction

AKOSKY™ AZUKI

**Hydrosoluble Trifolium
Pratense Sprouts Extract**

**Hydrosoluble Vigna
Radiata Sprouts Extract**



Lyophilization

**Trifolium Pratense Sprouts
lyophilized Extract**

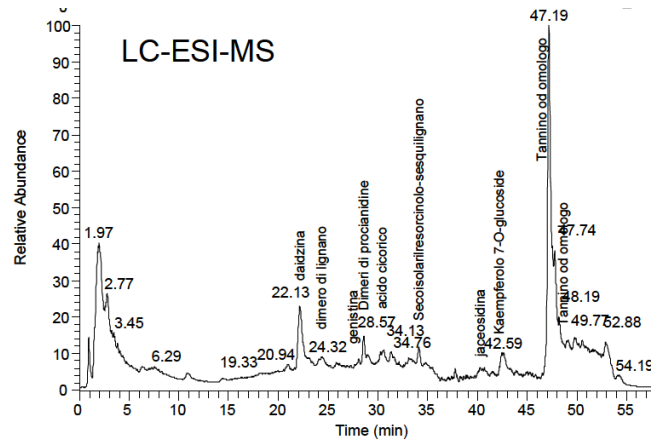
**Vigna Radiata Sprouts
lyophilized Extract**



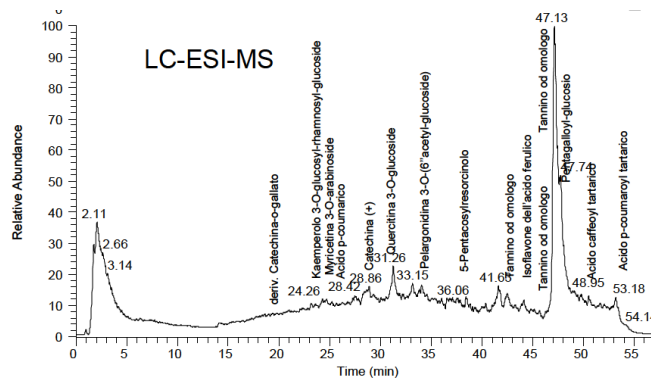
Glycerin



CHEMICAL ANALYSIS



Trifolium Pratense extract LC-ESI-MS spectra



Vigna Radiata extract LC-ESI-MS spectra

AKOSKY™ AZUKI contains a large number of compounds that act in perfect synergy:

- **POLYPHENOLS**
- **ISOFLAVONES**
- **FLAVONOIDS**
- **TANNINS**
- **AMINO ACIDS**

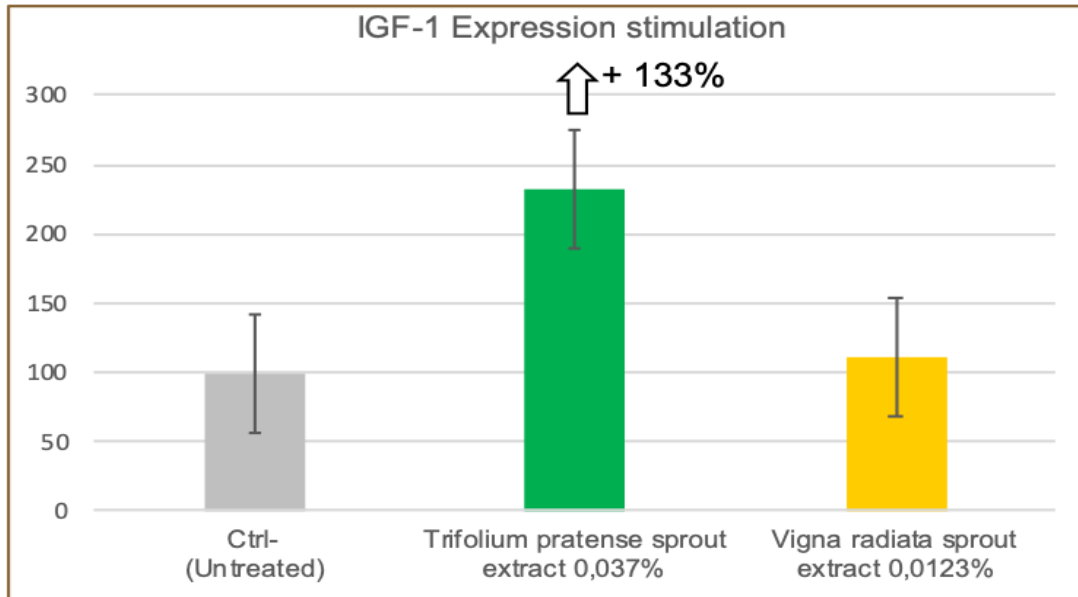


IN VITRO EFFICACY

IGF-1 AND PDGF-A EXPRESSION

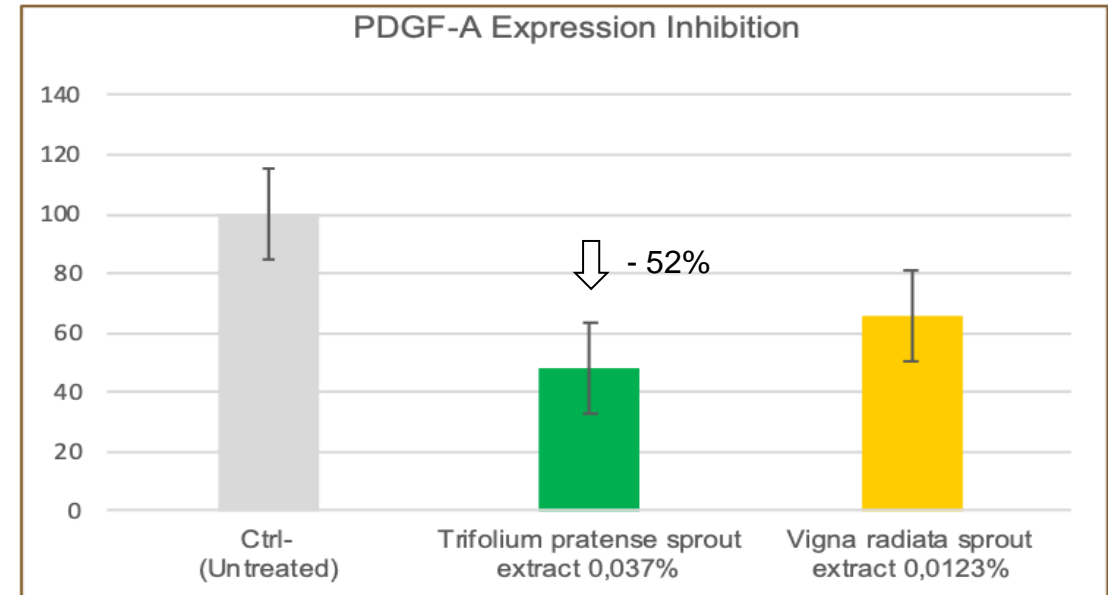


Human Follicle Dermal Papilla cells (HFDPC) were incubated with **different concentrations of AKOSKY™ AZUKI pure active powders** for 72h. The expression of the genes in HFDP cells was evaluated by a gene expression assay (RT-qPCR).



Insulin Growth Factor 1 (IGF-1) is a growing factor that regulates the proliferation of dermal papilla cells during hair follicle cycle. IGF-1 protects dermal papilla cells from the negative effects of DHT.

AKOSKY™ AZUKI stimulates the Insulin Growth Factor 1 (IGF-1) expression (+ 133%)



Platelet-Derived Growth Factor (PDGF-A) is a growing factor involved in pre-adipocytes differentiation. A down regulation of PDGF-A expression promotes the maturation of pre-adipocytes into adipocytes, forming the structural adipocytes layer around hair follicle.

AKOSKY™ AZUKI inhibits the Platelet-Derived Growth Factor (PDGF-A) expression (- 52%)

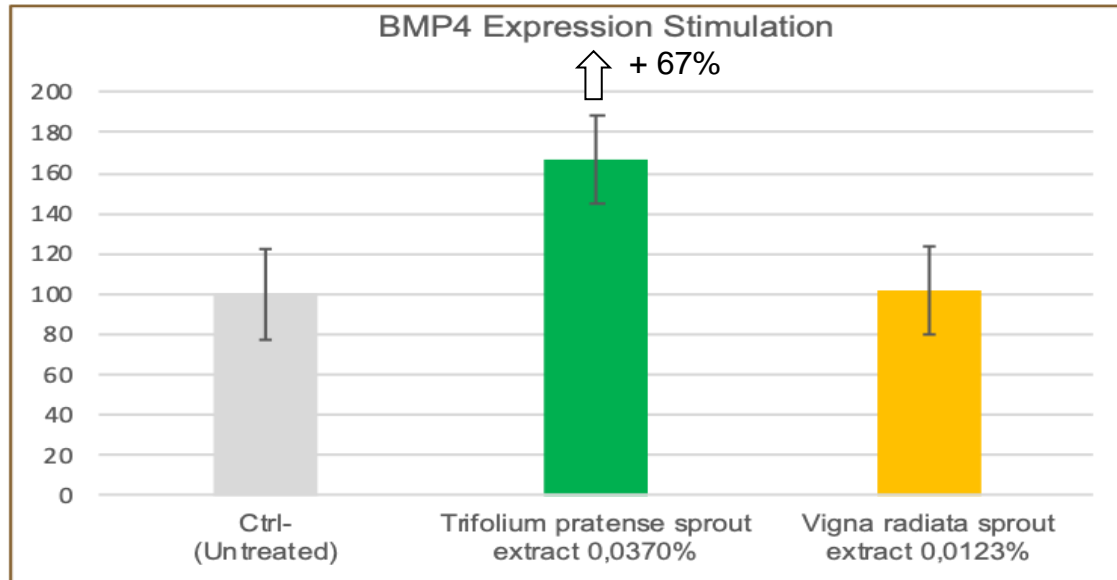


IN VITRO EFFICACY

BMP-4 AND SMC-3 EXPRESSION

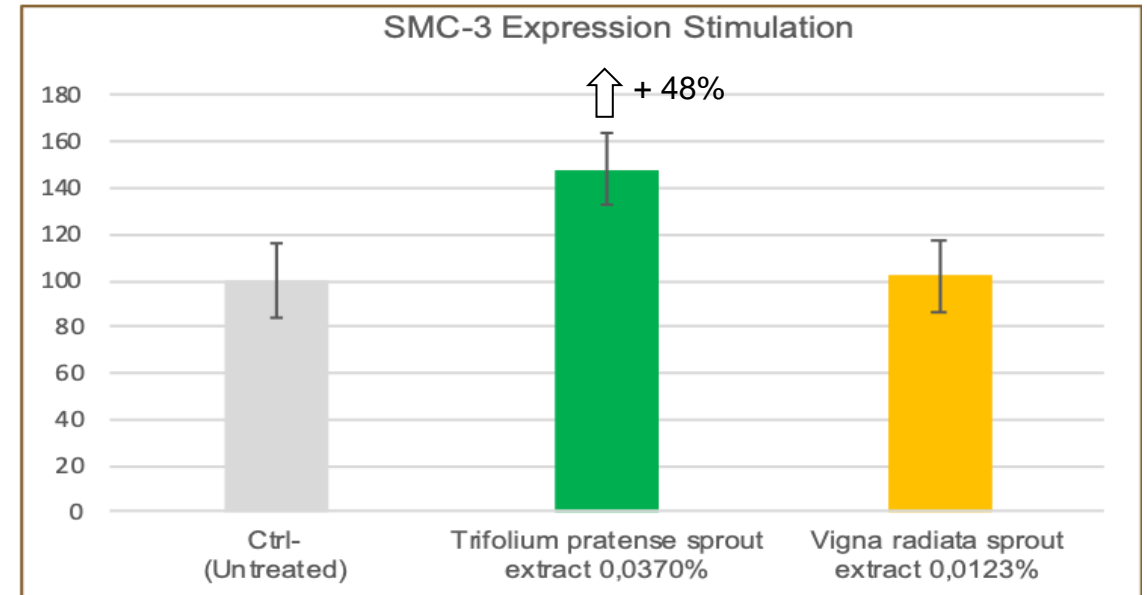


Human Follicle Dermal Papilla cells (HFDPC) were incubated with **different concentrations of AKOSKY™ AZUKI pure active powders** for 72h. The expression of the genes in HFDPC cells was evaluated by a gene expression assay (RT-qPCR).



Bone Morphogenetic Protein 4 (BMP4) is an inhibitor of Anagen phase and it prevents the exhaustion of hair follicle stem cells storage. Furthermore during Telogen phase, BMP4 promotes the maturation of dermal papilla, promoting a new Anagen phase.

AKOSKY™ AZUKI stimulates Bone Morphogenetic Protein 4 (BMP4) expression (+ 67%)



SMC-3 promotes the communication of dermal papilla cells with the other cells. This improves cell communication and provides an increase of hair follicle vitality.

AKOSKY™ AZUKI stimulates SMC-3 expression (+ 48%)



Human Follicle Dermal Papilla cells (HFDPC) were incubated with **different concentrations of AKOSKY™ AZUKI pure active powders** for 72h. The expression of the genes in HFDP cells was evaluated by a gene expression assay (RT-qPCR).

Marker Gene	Function	Result (%)
Insulin-like growth factor 1 (IGF-1)	Protects dermal papilla cells from the negative effects of DHT	+ 133
Platelet-Derived Growth Factor (PDGF-A)	A down regulation of PDGF-A expression promotes the maturation of pre-adipocytes into adipocytes , forming the structural adipocytes layer around hair follicle	- 52
Bone Morphogenetic Protein 4 (BMP4)	Regulates the telogen phase	+ 67
SMC-3	Improves the cell communication and provides an increase of hair follicles vitality	+ 48

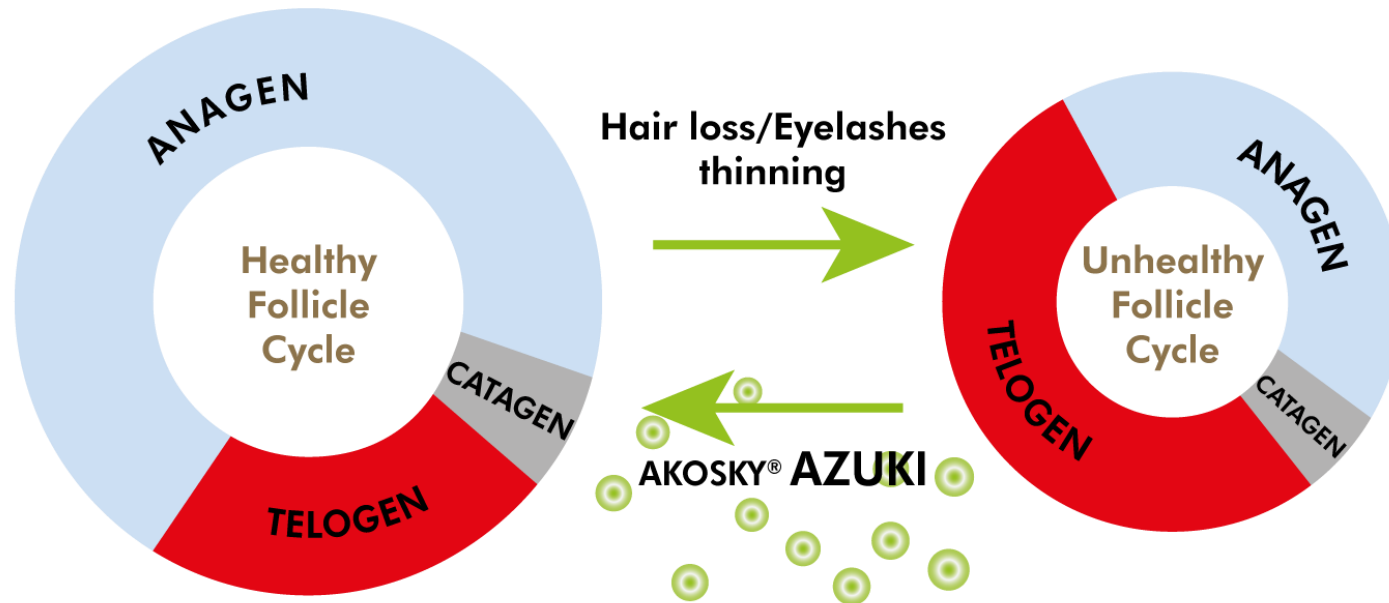


MECHANISM OF ACTION



Alopecia causes a reduction of the Anagen phase length and an increase of the Telogen phase duration. As a result, the hair follicle vitality decreases, as well as the stem cells storage. In this condition, the maturation of dermal papilla takes longer compared to a healthy hair follicle cycle.

AKOSKY™ AZUKI restores the correct hair follicle cycle promoting the **DERMAL PAPILLA MATURATION** and increasing the production of **GROWING FACTORS**.



HAIR GROWTH

26 male volunteers (age 25-55, with alopecia grade 2 and low anagen/telogen ratio) **were divided into two groups** of equal number. The first group applied on the scalp a product containing **AKOSKY™ AZUKI at 1%**, the other one applied a placebo formulation for 4 months.

The protocol evaluates the efficacy of **AKOSKY™ AZUKI**
TO STRENGTHEN THE HAIR AND IMPROVE THE ANAGEN/TELOGEN RATIO
after 28, 52, 84, and 112 days of product use compared to placebo.

Measurements:

Phototrichogram: close-up pictures of a small scalp area (approx. 1,8 cm²) are taken 3 days after shaving. Images are analyzed and the hair in anagen or telogen phase are quantified by a software.

Pull test: a gentle traction is exerted on a lock of hair (about 60) near the ear. When more than 6 hair are extracted, a defluvium is suspected and hair loss is evaluated accordingly.

Wash test: the hair is washed in a sink with a filter at the bottom. The hair lost during washing are collected and counted. Hair loss is evaluated accordingly.

Scalp microcirculation: the videocapillaroscope with optical probe, connected to an imaging analyzer, evaluates the level of scalp microcirculation.

Hair density: the videodermatoscope calculates the number of hair in a specific area of the scalp.

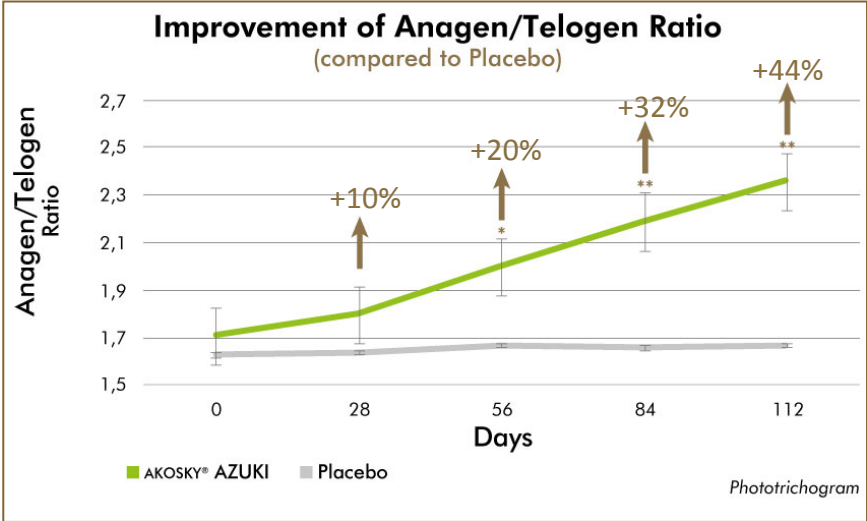


CLINICAL TEST



HAIR GROWTH

Days	Average n° of follicles in ANAGEN PHASE (± St.Dev.)	Average n° of follicles in TELOGEN PHASE (± St.Dev.)	ANAGEN/TELOGEN Ratio
0	111 (± 14)	65 (± 10)	1.7
28	114 (± 14)	63 (± 11)	1.8
56	117 (± 14)	59 (± 10)	2.0
84	122 (± 14)	56 (± 10)	2.2
112	126 (± 14)	53 (± 11)	2.4

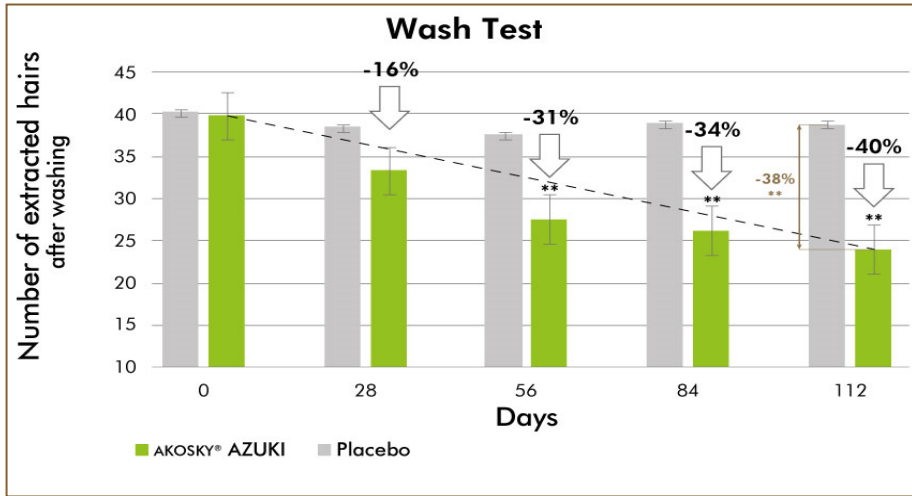
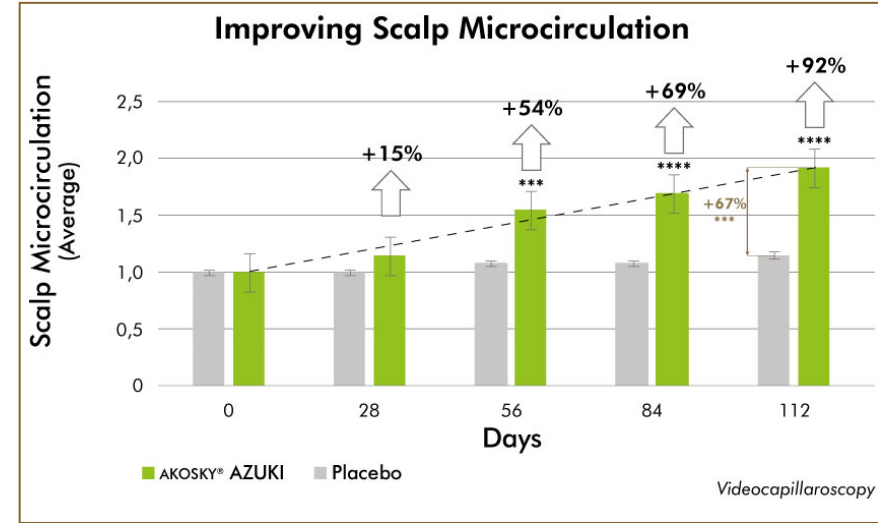
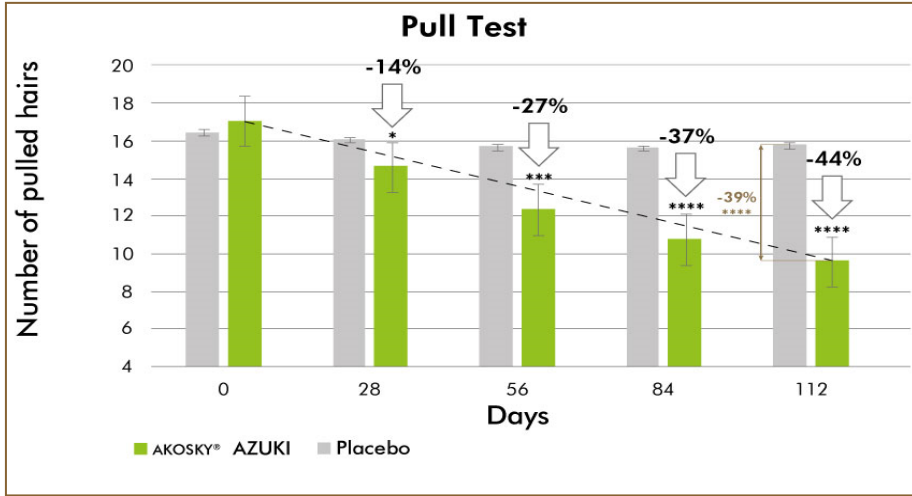


After 4 months, AKOSKY™ AZUKI at 1% INCREASES HAIR IN ANAGEN PHASE and REDUCES HAIR IN TELOGEN PHASE

*p ≤ 0.05, **p ≤ 0.01, ***p ≤ 0.001, ****p ≤ 0.0001



HAIR GROWTH

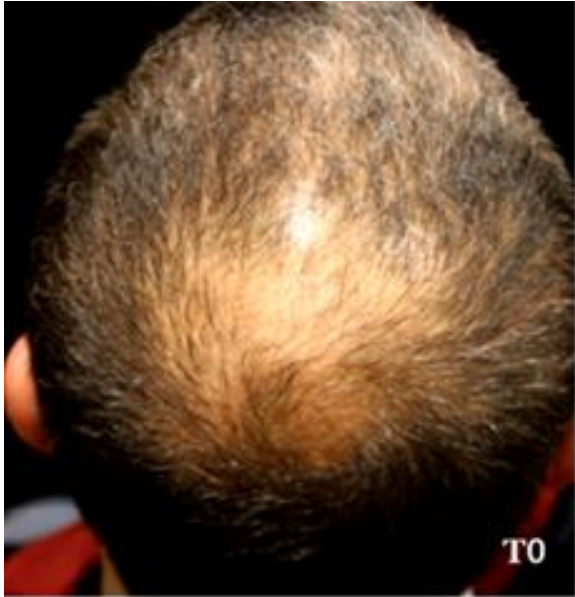
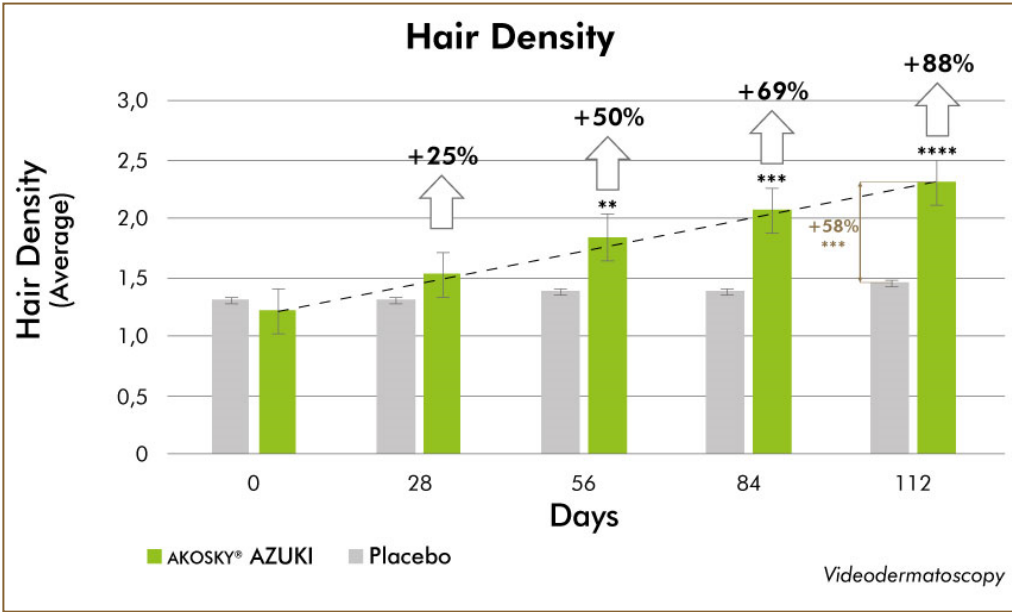


AKOSKY™ AZUKI at 1% IMPROVES HAIR DENSITY (+ 88%) after 4 months



*p ≤ 0.05, **p ≤ 0.01, ***p ≤ 0.001, ****p ≤ 0.0001

HAIR GROWTH



*p ≤ 0.05, **p ≤ 0.01, ***p ≤ 0.001, ****p ≤ 0.0001

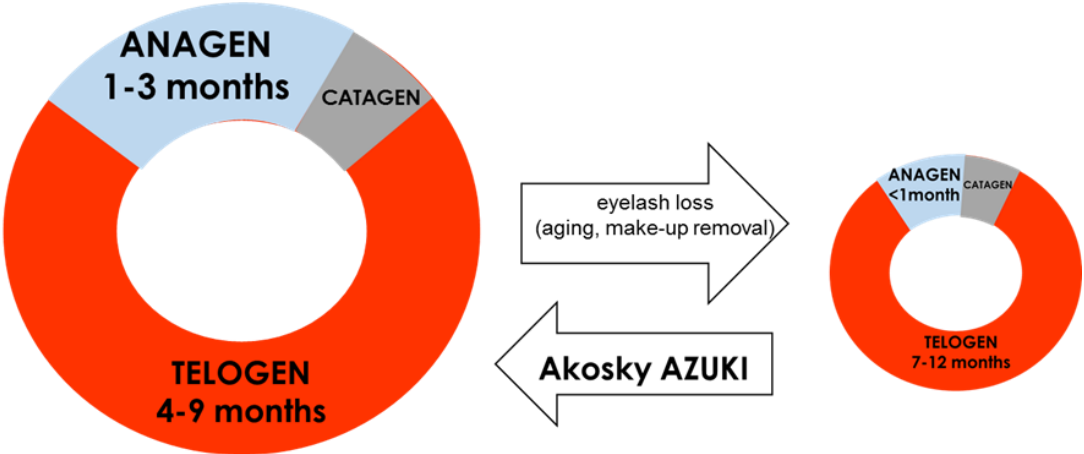
Hair density improvement from Day0 to Day112



EYELASH FOLLICLE CYCLE

- The eyelash follicle cycle is similar, although shorter, than the hair follicle cycle (anagen phase: 1 to 3 months; telogen phase: 4 to 9 months)
- The average number of eyelashes is 100-200 on upper eyelid and 75-100 on lower lid
- Genetics, age, and multiple environmental factors cause the thinning and the density decrease of eyelashes with emotional and psychological consequences

AKOSKY™ AZUKI promotes the production of **GROWING FACTORS** that regulate the stages of **EYELASH CYCLE**, thus **IMPROVING EYELASHES LENGTH AND STRENGTH**



EYELASHES GROWTH

15 female volunteers (average age 42 years old) applied a product containing **AKOSKY™ AZUKI at 1%** on one eye and a placebo formulation on the other eye.

The products were applied twice a day, in the morning and in the evening, at the roots of the lashes for 2 months.

The protocol evaluates the efficacy of **AKOSKY™ AZUKI**
TO IMPROVE THE EYELASHES MAXIMUM AND AVERAGE LENGTH, AS WELL AS THEIR DENSITY,
after 15, 30, and 60 days of product use compared to placebo.

Measurements:

The **maximum length** is the linear length from the eyelash insertion on the upper eyelid to the eyelash end point.

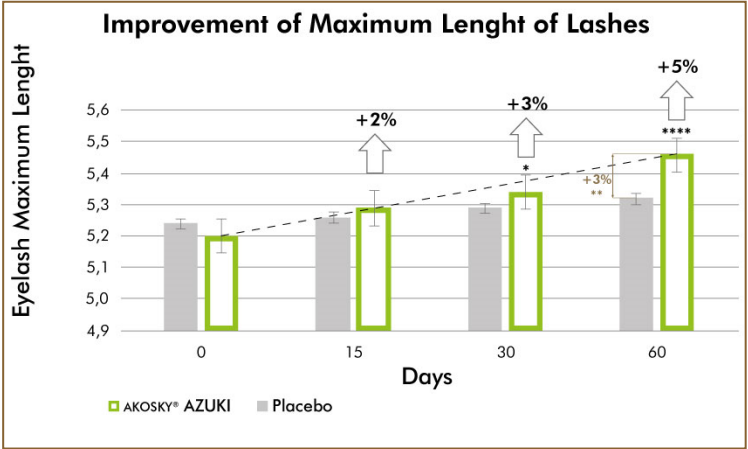
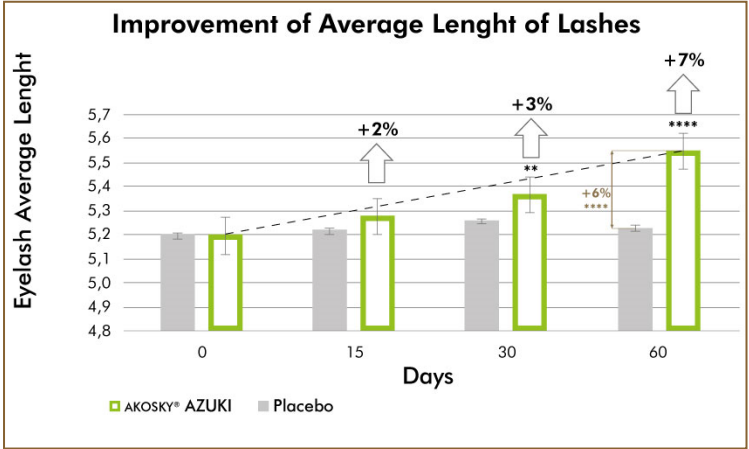
The **average length** is the mean of the measured linear lengths.

The **eyelashes density** is the number of eyelashed in a small section of the eyelid.

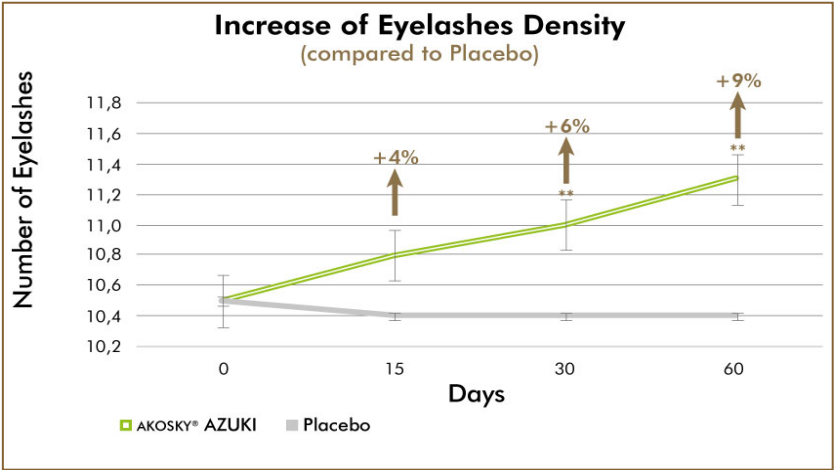
(Measurements taken with Fotofinder Dermatoscope)



EYELASHES GROWTH



11 EYELASHES
more on 200
LASHES in 30
days only!

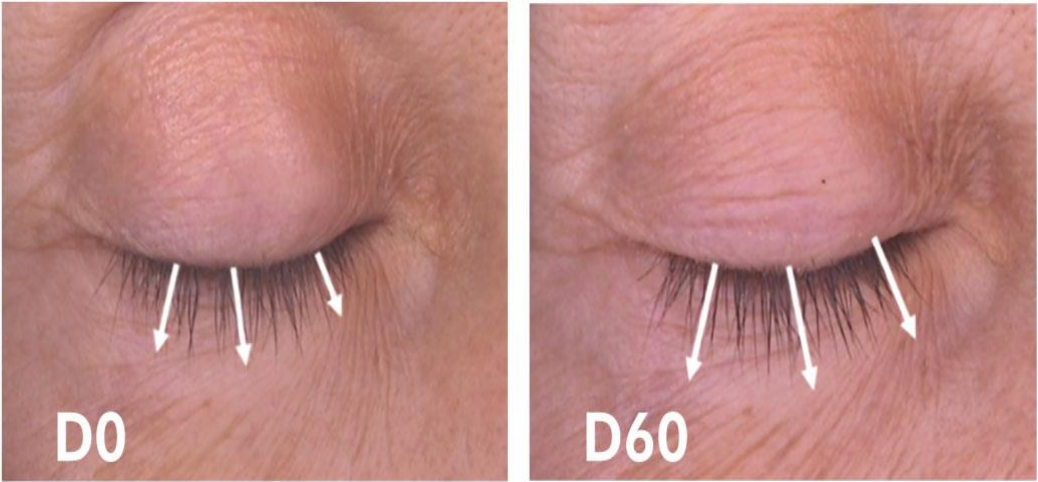


After two months, **AKOSKY™ AZUKI**
INCREASES EYELASHES MAXIMUM
(+ 5%) and average (+ 7%) length Vs T0,
as well as **EYELASHES DENSITY (+ 9%)**

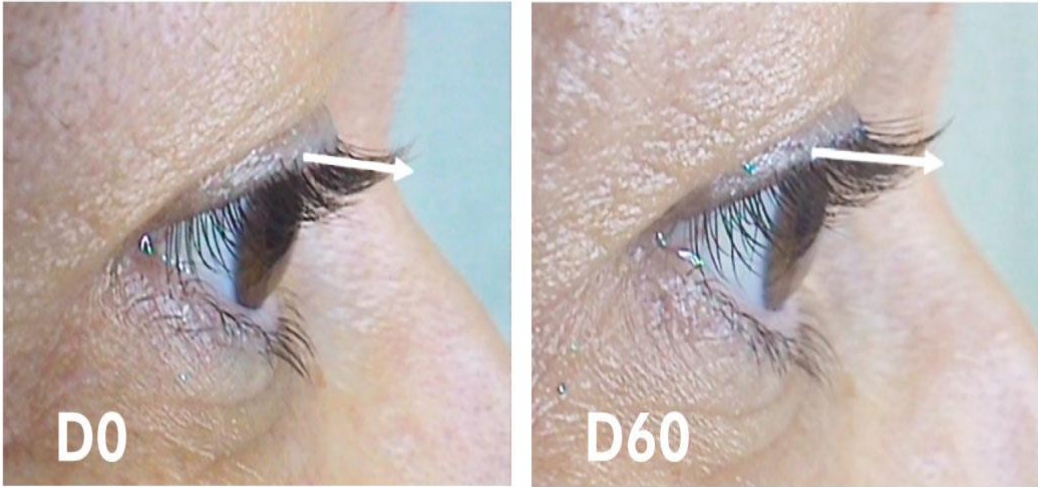
*p ≤ 0.05, **p ≤ 0.01, ***p ≤ 0.001, ****p ≤ 0.0001



EYELASHES GROWTH



Average length improvement from Day0 to Day 60



Maximum length improvement from Day0 to Day 60



COSMETIC PROPERTIES

- IMPROVEMENT OF HAIR FOLLICLE STEM CELLS HOMEOSTASIS
- RE-EQUILIBRATION AND INTENSIFICATION OF HAIR FOLLICLE CYCLE
- STIMULATION OF HAIR/EYELASHES GROWTH



COSMETIC APPLICATIONS

HAIR CARE

- HAIR REGROWTH
- ANTI-HAIR LOSS
- HAIR TREATMENT VIALS

EYELASHES

- EYELASHES REGROWTH
- STRONGER, DENSER, LONGER EYELASHES



PRODUCT INFORMATION



INCI name: Glycerin, Aqua (Water), (Trifolium Pratense (Clover)/Vigna Radiata) Sprout Extract

CAS number: 56-81-5, 7732-18-5, --

EINECS number: 200-289-5, 231-791-2, --

REGULATORY: EU, USA, China*, Japan*

*INCI: Glycerin, Aqua (Water), Trifolium Pratense (Clover) Extract, Vigna Radiata Seed Extract

APPEARANCE: Slightly opalescent light-brown liquid

SOLUBILITY: Hydrosoluble

USE: 1%

PRESERVATIVES: Potassium sorbate, Sodium benzoate

FORMULATION TIPS: The product is liquid and easy to use, quickly absorbing and not sticky on hair/eyelashes

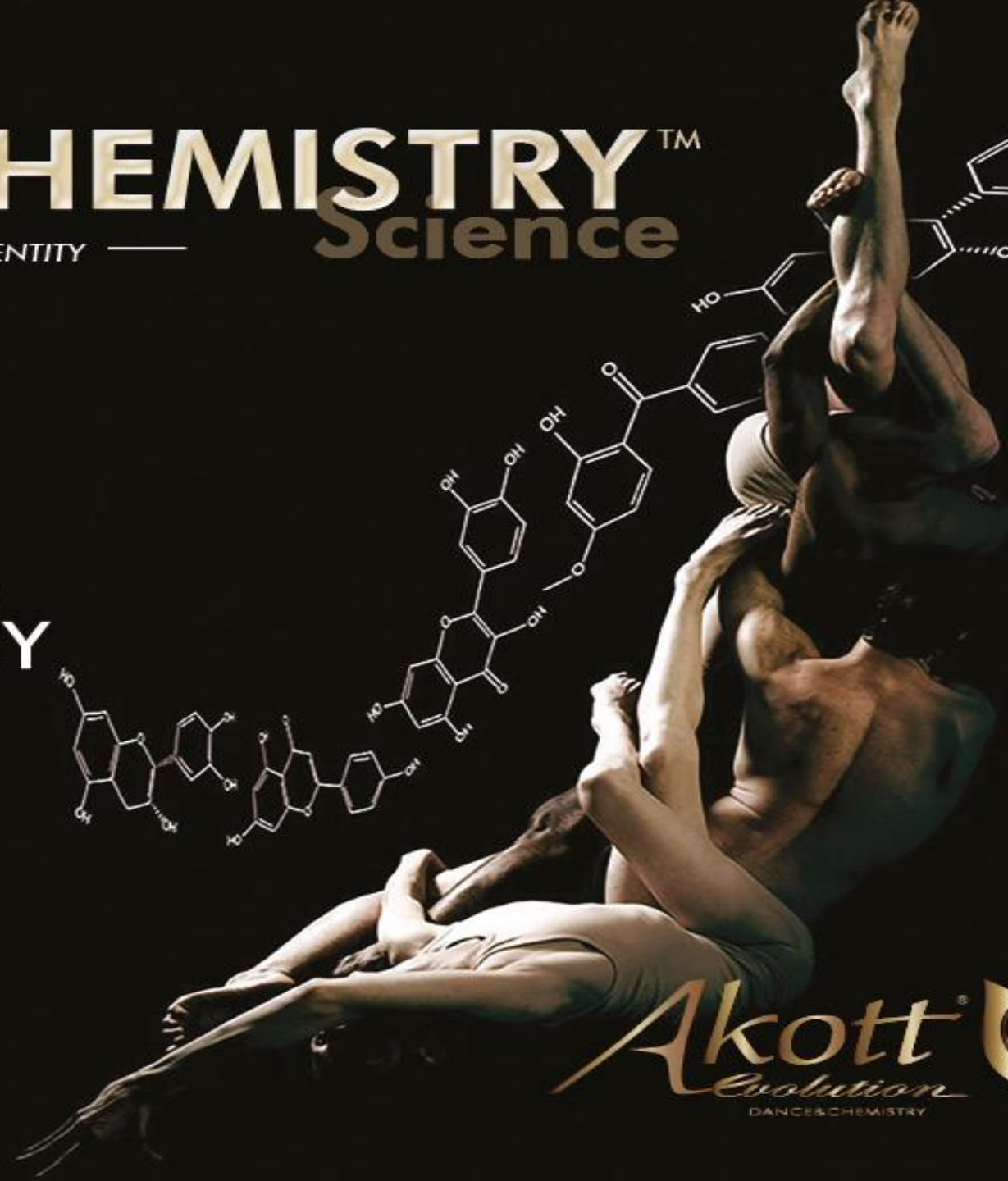
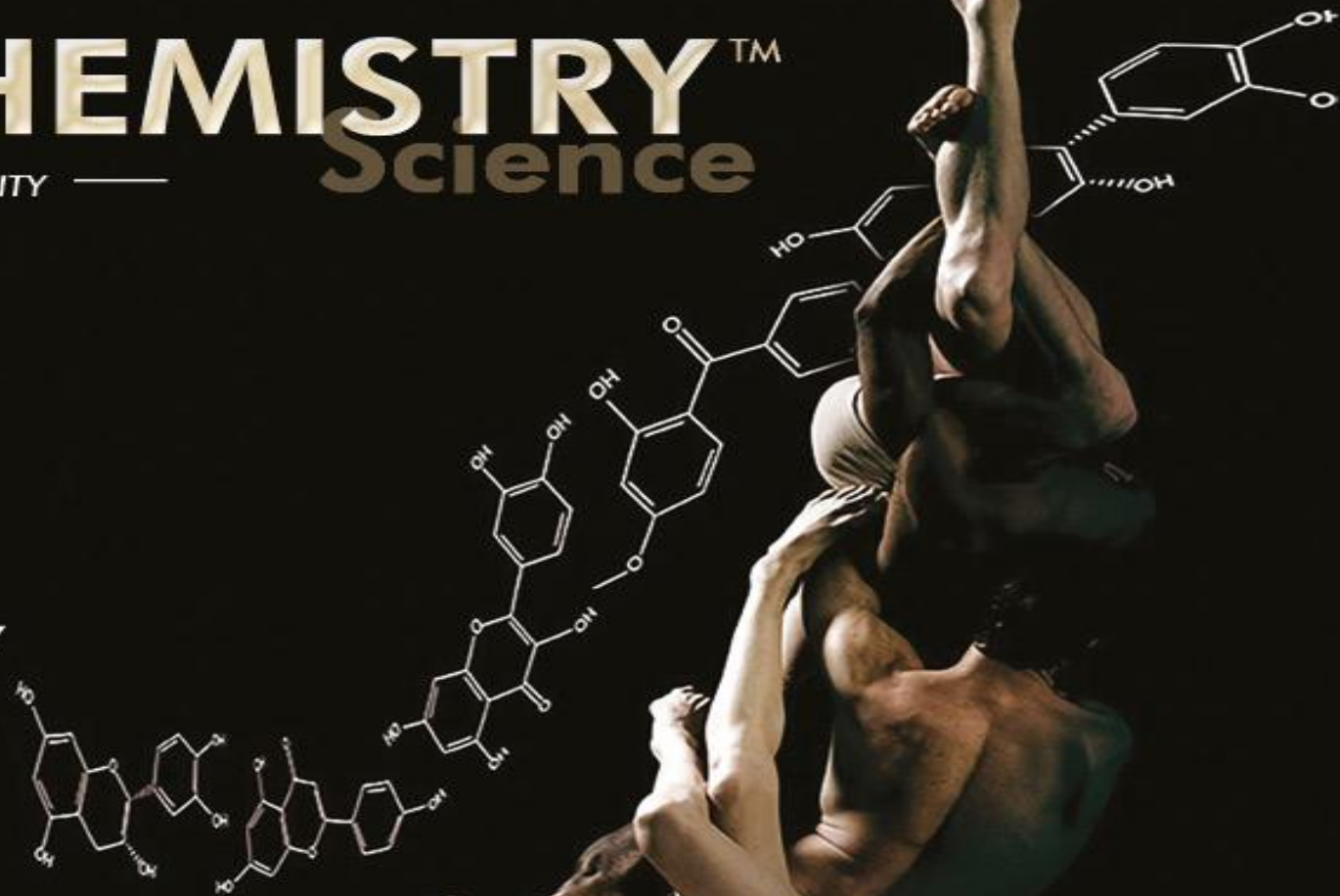
SAFETY DATA: **AKOSKY™ AZUKI** has been tested for skin tolerance and has demonstrated a good safety profile



Art DANCE & CHEMISTRY™ Science

— THE INSPIRED AKOTT BRAND IDENTITY —

CREATIVITY
EMOTION
DANCE
SCIENCE
AKOTT
STORYTELLING MARKETING
ART
PHILOSOPHY
PASSION
CHEMISTRY
RESEARCH
TECHNOLOGY



"Dance is the mother of all Arts
as Chemistry is the mother of all Sciences"

Annaclaudia Ottavi
PRESIDENT & CEO

Akott
Evolution
DANCE & CHEMISTRY

