

AKOSKY® AZUKI



FROM THE MAGICAL **SPROUTS**,
THE EXTRAORDINARY ACTIVE FOR
NATURALLY INTENSIFIER
OF **HAIR** FOLLICLE CYCLING
AND LONGER DENSER **EYELASHES**

Akott Evolution 

HAIR LOSS

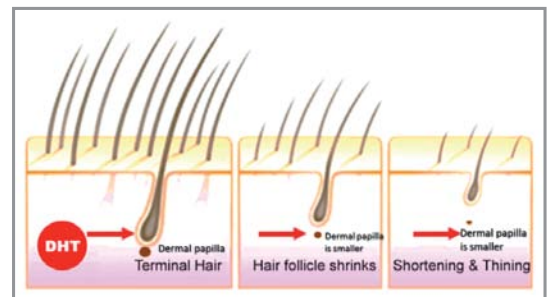
A healthy person has more than 80% of hair that are growing (Anagen fase) and 15% of hair that are falling (Telogen fase) on daily basis. **Hair loss is characterized by decrease of the physiological ratio Anagen/Telogen.**

The Androgen 5-alpha-dihydrotestosterone (DHT) is naturally present in the body and sometimes high levels can be measured in hair follicles.

The most frequent claim for cosmetic hair loss products is 5-alpha reductase inhibition which is an enzyme that transforms testosterone in to DHT.

The hair follicle cycle is regulated by dermal papilla (DP). Studies show that in **DHT-sensible follicles the vitality of DP is decreased and all fases of the hair cycle weaken progressively in every new cycle.** This leads to the **thining of the hairs** until they dissappear completely.

THE PRESERVATION OF VITALITY OF DERMAL PAPILLA COULD BE EFFICIENT WAY TO PREVENT HAIR LOSS



Dermal papilla releases positive growth factors and genetic messages throughout the life cycle of the hair follicle. The efficiency of this process is directly correlated to the dimension and vitality of dermal papilla.

Androgens alter the production of positive growth factors by influencing dermal papilla and compromise the correct functioning of the hair follicle. Androgens also interrupt the cellular communication between different parts of the hair follicle and dermal papilla.

RE-EQUILIBRATION OF THE POSITIVE GROWTH FACTORS PRODUCTION COULD BE ADDITIONAL WAY TO PREVENT HAIR LOSS.

Many hair loss products target the extension of Anagen Fase which will slow the hair loss on short-term with important risk to damage hair cycle on long-term. This happens because Telogen and Catagen fase do not complete properly.

It can lead to exhaustion of hair follicle stem cells and non-complete regeneration of hair follicle necessary for the next cycle.

EYELASHES

Eyelashes aging

The average number of eyelashes is 100-200 on upper eyelid and 75-100 on lower lid. The thinning and the decrease of density of eyelashes is a part of the aging process and this cosmetic issue is easily noticed.

Also the eyelashes hair cycle comprises three stages but it is shorter so eventual weakening of the eyelash cycle is much faster than in scalp hair follicle.

Eyelash follicle is smaller in size than Hair follicle and its activity **depends on the health of eyelid extracellular matrix.**

STIMULATION OF THE PRODUCTION OF THE GROWTH FACTORS THAT REGENERATE EYELID EXTRACELLULAR MATRIX COULD BE A WAY TO PROMOTE STRONGER LASHES.



AKOSKY®AZUKI... MECHANISM OF ACTION

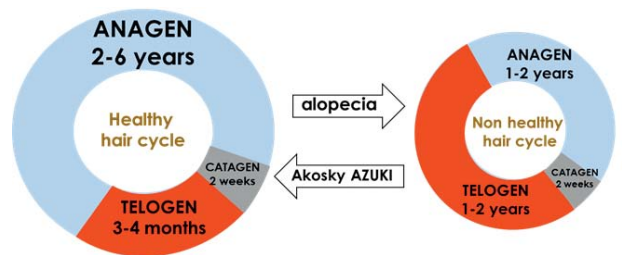
Akott has developed pure extracts from **Fresh Organic Mung Bean** and **Red Clover Sprouts** to test them in stimulating dermal papilla in vitro and reducing the hair loss in vivo.



Sprouts are one of **the richest sources** in nature because they contain **exotic molecules**. This occurs because the plant protects itself from numerous abiotic factors during sprouting and for that uses chemical defence that consists of large number of unique compounds.

AKOSKY AZUKI IMPROVE THE LIFESPAN OF THE ANAGEN FASE BUT IT ALSO ENSURE THE THE CATAGEN AND TELOGEN FASE COMPLETE THEIR CYCLE IN ORDER TO PRODUCE HEALTHY AND THICKER LOOKING HAIR.

Re-equilibration of homeostasis of hair follicle based on amplifying the intensity of naturally occurring processes in the hair follicle ensures very good toxicological profile of AKOSKY AZUKI and safe use for long term.



As represented on the graph below **AKOSKY AZUKI re-equilibrates the vitality of all fases of hair follicle cycle** by activating the dermal papilla cells and regulating the production of positive signaling molecules as demonstrated by tests in vitro.

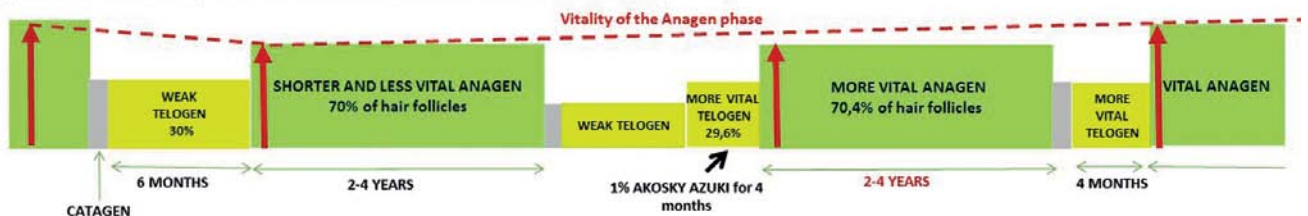
Hair cycle of healthy hair follicle



Hair cycle of non-healthy hair follicle



Hair cycle of non-healthy hair follicle treated with 1% AKOSKY AZUKI



IN VITRO EFFICACY

In vitro testing shows increased production of IGF1, BMP4, PDGFA, SMC3 proteins to **RESTORE HEALTHY HAIR FOLLICLE CYCLING**. Clinical studies show improvement of **hair density** and increase of **active hair follicles** after 28 days.

EFFICACY	TEST	RESULTS*
Optimizing hair follicle cycling	Insulin Growth Factor I (RT-PCR) – stimulates hair growth	+142%
	Platelet Derived Growth Factor (RT-PCR) – inhibits adipocyte formation	-52%
	Bone Morphogenetic Protein 4 (RT-PCR) – stimulates dermal papilla	+67%
	Structural Maintenance of Chromosome 3 (RT-PCR) – increases signaling	+48%

Study was run on human hair dermal papilla cells (HFDPC) – *all data significant compared to control

IGF-I (Insulin Growth Factor I) promotes hair growth by regulating keratinocytes proliferation and migration during the hair cycle. IGF-I is also important inhibitor of apoptosis thus prevents the HF from developing catagen-like status.

DHT inhibits IGF-I expression at the dermal papilla and decrease significantly hair growth. AKOSKY AZUKI stimulates in vitro expression of IGF-I by **+142%** respect to the control and counteracts negative effect of DHT which reaches high concentrations in balding scalp.

BMPs (Bone Morphogenetic Proteins) are involved in stimulation of dermal papilla for new hair cycle and differentiation of immature DP in mature DP. **Only mature DP is able to instruct epithelial cells how to start hair growth.** AKOSKY AZUKI stimulates in vitro expression of BMP4 by **+67%** respect to the control and stimulates dermal papilla for new hair cycle.

A hair fiber is formed of hair shaft and hair channel. BMP4 regulates the differentiation of hair matrix cells in hair shaft and hair channel to create a complete hair fiber. Studies show that hair matrix cells in absence of BMP4 differentiate in empty hair channel without hair shaft, so the final fiber results weaker.

AKOSKY AZUKI stimulates in vitro expression of BMP4 by **+67%** respect to the control on dermal papilla cells in vitro, condition that corresponds to dermal papilla in Telogen fase. **Thus providing complete hair fiber formation.**

Studies demonstrated that **during activation of hair follicle the thickness of the adipocyte layer around hair follicle doubles.** PDGF-A (Platelet Derived Growth Factor) inhibits formation of adipocytes.

AKOSKY AZUKI stimulates the formation of intradermal adipocyte layer around hair follicle by **down-regulation of PDGF-A.**

The SMC3 (Structural Maintenance of Chromosome 3) gene provides instructions for making the SMC3 protein. The SMC3 protein is found primarily in the nucleus, some of this protein is exported from cells. The exported protein is usually called Bamacan. **The proteoglycan Bamacan is expressed in the Anagen dermal papilla and promotes cell communication of dermal papilla with other cells.** AKOSKY AZUKI stimulates the expression of SMC3 by **+48%** in vitro and thus promotes better cellular communication in the hair follicle.

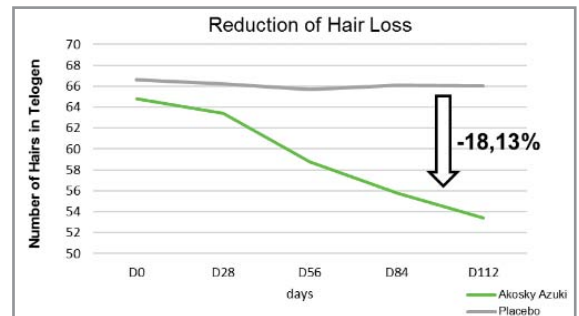
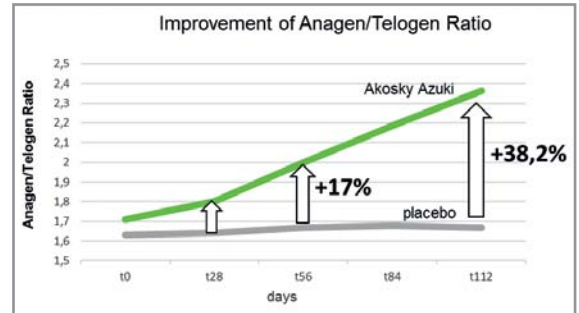
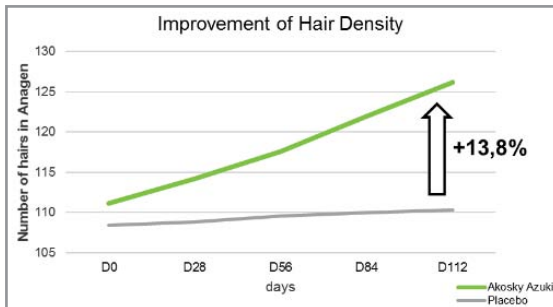
CLINICAL STUDIES

INCREASING THE ANAGEN/TELOGEN RATIO – RESTORING A HEALTHY HAIR CYCLE:

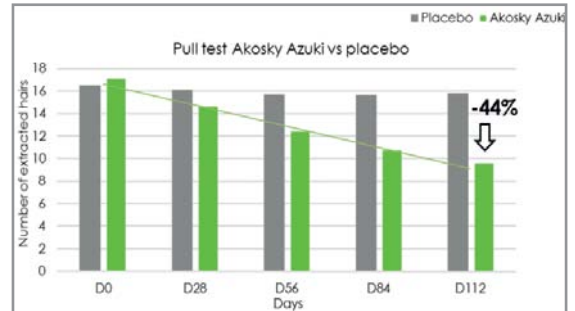
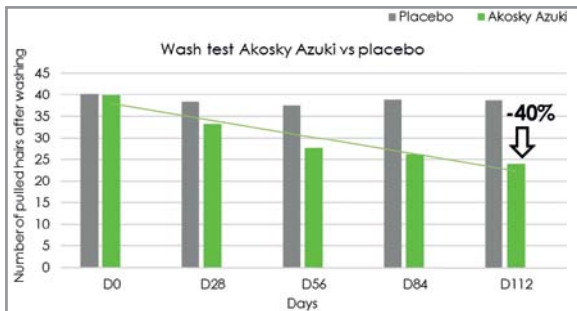
26 males (age 25-55 years old) presenting a low anagen/telogen ratio applied a product containing Akosky Azuki (1%) or a placebo (control) formulation for 4 months.

All data are significant compared to Placebo - Phototricogram

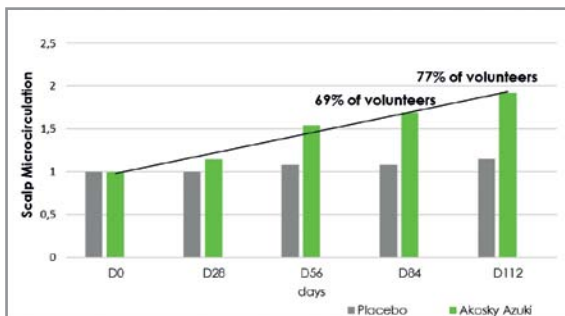
Improvement of Hair Density and Reduction of Hair Loss



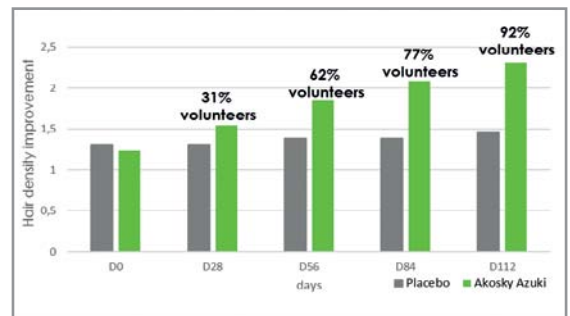
Developing Stronger Hair



Improving Scalp Microcirculation



Increasing Hair Density



Videocapillaroscopy with optical probe, connected to an imaging analyzed software



Videodermatoscope which calculates the number of hair a specific area. The volunteers at the beginning at the test had very low hair density: <80 hair/cm

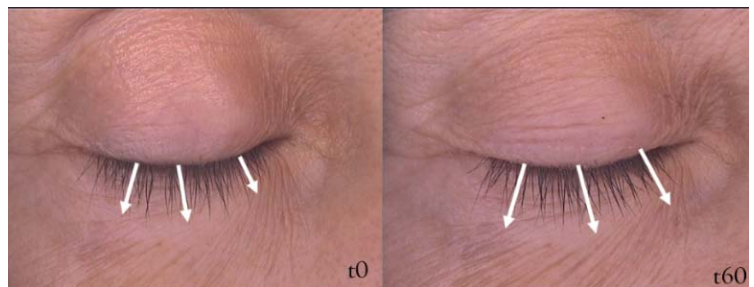
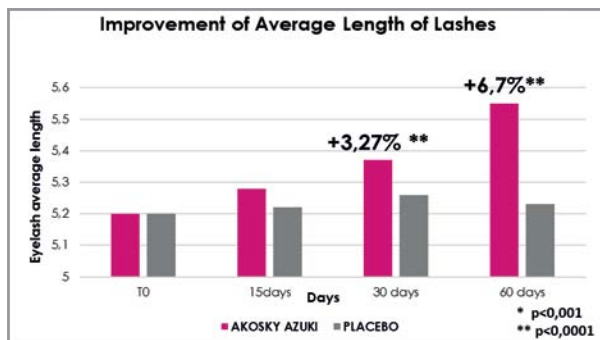
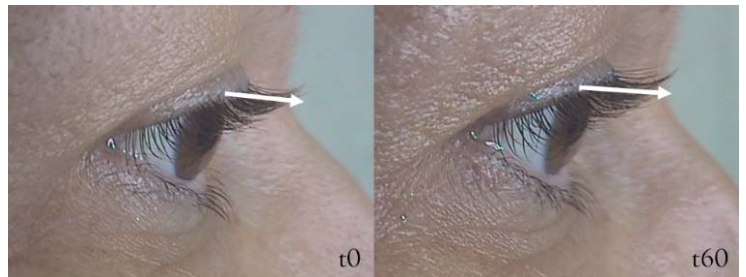
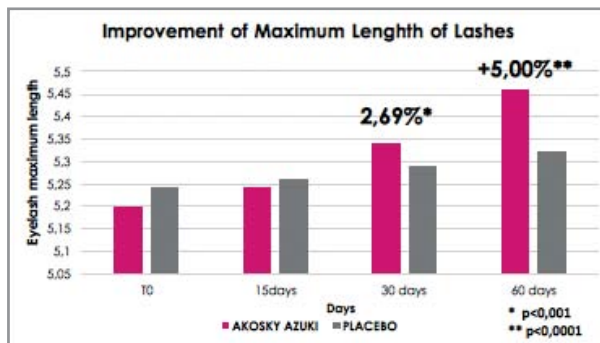
Evaluation Criteria:	
No variation	1
Slight variation	2
Fairly good variation	3
Good variation	4

CLINICAL STUDIES

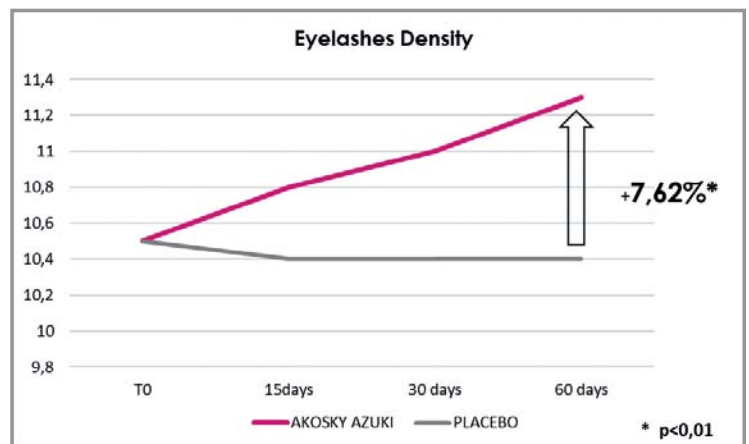
INCREASING THE EYELASHES DENSITY

15 female volunteers (average age 41,7 years old) applied a product containing Akosky Azuki at 1% on one eye and a placebo formulation on the second eye. The subjects applied the products at the roots of lashes twice a day, in the evening, for 60 days.

The efficacy of the product is shown **by an increase in the values of the maximum and average eyelashes length and in the number of eyelashes.**



**10 NEW EYELASHES MORE
ON 200 LASHES
ONLY AFTER 30 DAYS**



PRODUCT INFORMATION

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

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

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

APPEARANCE: Slightly opalescent light-brown liquid.

SOLUBILITY: Hydrosoluble.

USE: Recommended dosage is **1%**.

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

COSMETIC PROPERTIES

BIOMIMETIC GROWTH FACTOR

APPLICATIONS

HAIR REGROWTH

ANTI-HAIR LOSS PRODUCTS

EYELASHES INTENSIFIER

HAIR TREATMENT VIALS

SAFETY DATA

AKOSKY AZUKI has been tested for skin tolerance and demonstrated good safety profile



CLINICALLY TESTED FORMULATIONS

TRANSPARENT EYELASHES GEL		
FASE	INGREDIENT	%
A	ACQUA	90,50
	PENTYLENE GLYCOL	6,00
	PROPYLENE GLYCOL	2,00
B	AKOLL X (Xanthan Gum)	0,30
C	Gellan Gum	0,20
D	AKOSKY AZUKI Glycerin (and) Water (and) (Trifolium Pratense (Clover) /Vigna Radiata) Sprout Extract	1,00

HAIR LOSS SERUM		
FASE	INGREDIENT	%
A	ACQUA	66,80
	GLYCERIN	0,10
	AKOLL X (Xanthan Gum)	0,10
B	Ethanol	30,00
	SPIDER ABN (Sorbeth-2 / Oleate / Dimer Dilinoleate Crosspolymer)	1,00
C	AKOSKY AZUKI Glycerin (and) Water (and) (Trifolium Pratense (Clover) /Vigna Radiata) Sprout Extract	1,00
D	Citric Acid	q.s.
E	Konser 712 (KosmAG)	1,00

**From the dancing molecules,
the kinetic movement of nature for powerful ACTIVES**

AKOTT R&D combines **ART & SCIENCE** likewise **DANCE & CHEMISTRY**
to create a **UNIQUE BRAND NEW ACTIVES-CONCEPT**
applying its **BIOTECHNOLOGY KNOW-HOW** for **HIGHLY EFFECTIVE**
and **MULTIFUNCTIONAL COSMETIC ACTIVES**



AKOSKY LINE...THE INNOVATIVE ACTIVE INGREDIENTS!

The **AKOSKY PRODUCTS RANGE** is the result of **curiosity-driven research** which comprises analysis of different industries and applications, taking also into account a new development in contemporary arts and their application in Science.

AKOTT EVOLUTION srl

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