



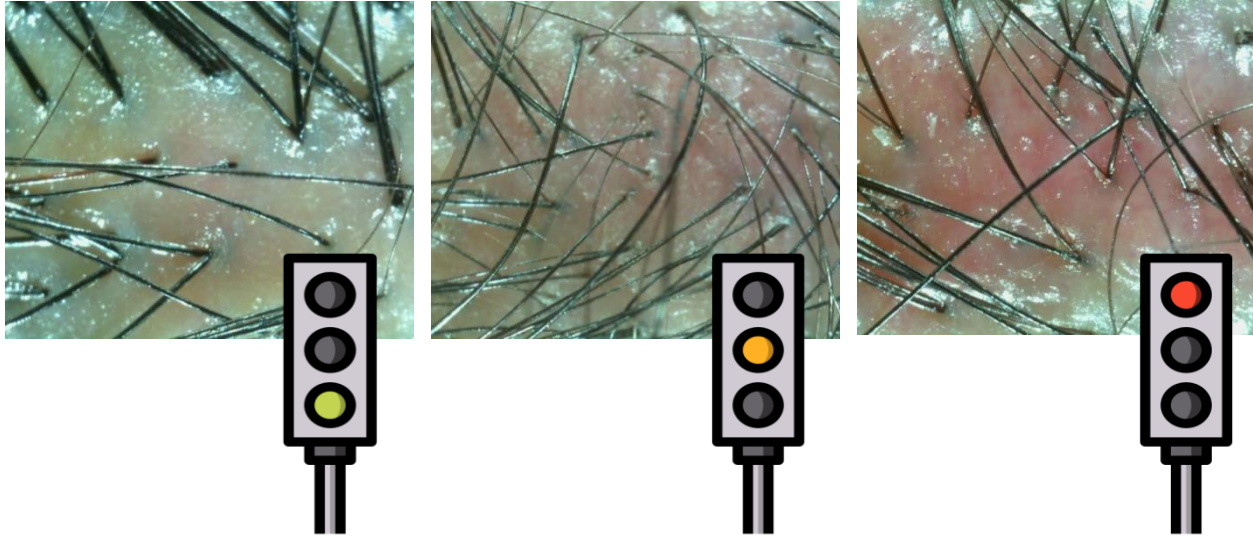
PRODUCT CODE - M101746

# TRICORA™ QuinoLac

Green Light for Your Scalp & Hair Root



# Scalp Traffic Sign



- “Green Light” - Healthy scalp, pores and hair follicles  
=> low risk of hair loss
- “Yellow Light” - Sebum, Dead skin cells on scalp  
=> leading to risk of hair loss
- “Red Light” - Sensitive, Inflammatory scalp  
=> Very high risk of Hair loss

To maintain “Green Light”, Scalp condition must be restored.

To restore scalp homeostasis, a balance must be achieved between antioxidation, anti-inflammation, blood flow improvement, nutrient supply, and enhanced moisturization. This balance is key to maintaining a healthy 'Green Light' scalp state. Quinoa is gaining attention as a next-generation source material for scalp and hair root care, providing protein and abundant free amino acids. Morechem has combined the potential of Quinoa with its proprietary fermentation technique to develop TRICORA™ QuinoLac, a new hair care ingredient designed for the 'Green Light' scalp.

# Quinoa: The Secret to Healthy Hair



Quinoa, a superfood known as the 'Mother Grain' in the Inca civilization, contains up to 20% plant-based protein. Notably, Peru is a region in South America with a low rate of hair loss and is renowned for the healthy maintenance of hair even in its conditions of intense UV radiation and dry, high-altitude terrain. A survey of the global wig market reveals that 'Peruvian wigs,' famous for being high-quality, are linked to the healthy hair of the Peruvian people, boasting silky, soft hair texture and high durability.



**Super Food  
Quinoa**



**Eco-Green  
Biotech™**



**Free  
Amino acid**

TRICORA™ QuinoLac enhances absorption by containing Quinoa's plant-based protein in the form of free amino acids. This promotes rapid absorption and efficient hair & Scalp care, allowing you to experience a healthy scalp and hair in your daily life.

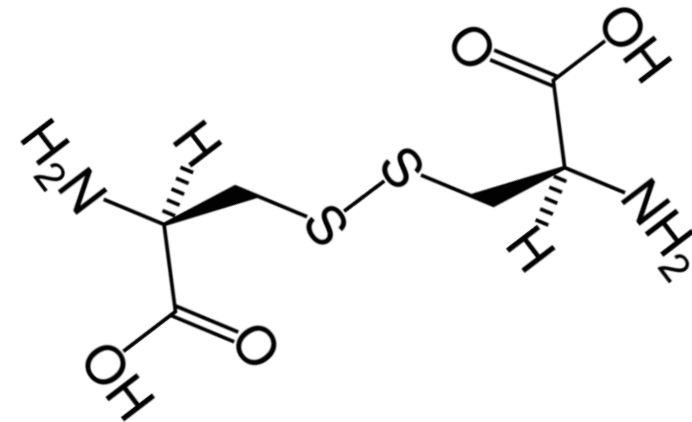
# Essential Amino Acids for Hair Care ; L-Cystine

L-Cystine is a sulfur-containing amino acids and an essential component of keratin.

When absorbed into the scalp, it activates the metabolism of hair follicle cells to promote protein synthesis and maintain hair strength, elasticity and radiant. It also assists in the restructuring of damaged hair fibers and improve cuticle condition.

Furthermore, L-Cystine's antioxidant activity maintains healthy condition of scalp and follicles through inhibit inflammation and cell damage. It can lead extension of anagen.

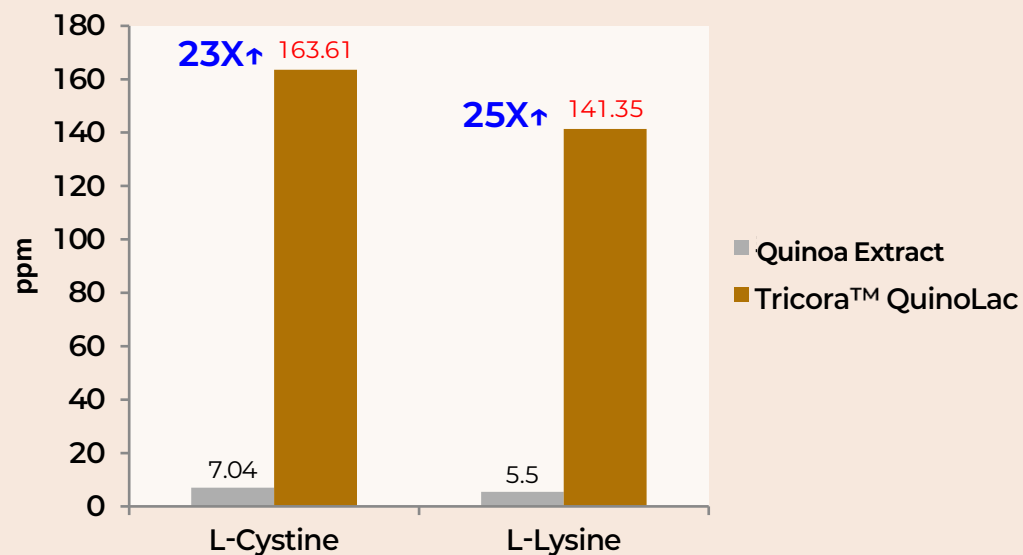
- ✔ Essential Amino Acids for Keratin synthesis
- ✔ Prevent Telogen, Increase Hair Thickness & Growth
- ✔ Extention of Anagen Phase
- ✔ Increase Scalp blood flow & follicle activation



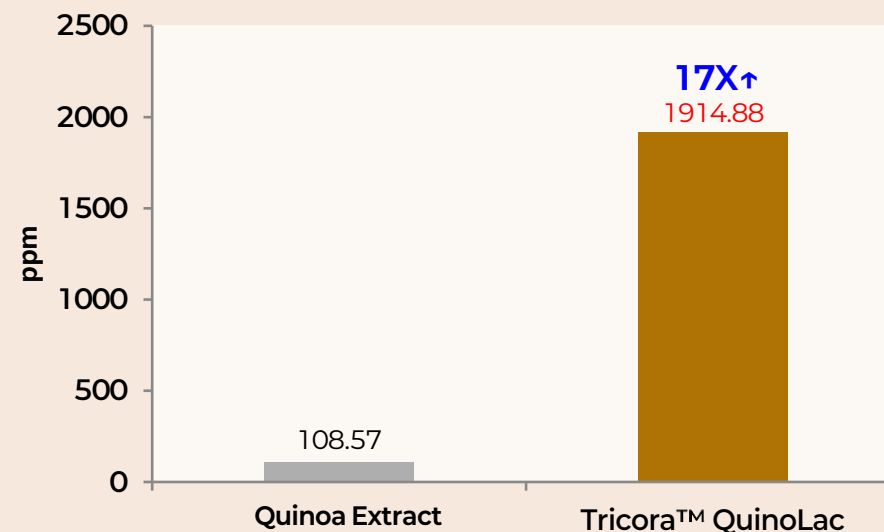
# 17x Free Amino Acids

Tricora™ QuinoLac is a product that hydrolyzes Quinoa protein through a Lactobacillus fermentation process, resulting in a product that contains 17 times more free amino acids compared to general Quinoa extract.

## \*\* L-Cystine & L-Lysine \*\*



## \*\* Total Free Amino Acids \*\*



\*\* Analysis : HPLC / Method : Total Amino acid Analysis

# Technology for Maximizing Quinoa's Efficacy

## Strain Isolation and Identification



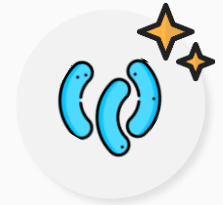
Quinoa Research



Strain Screening



Activation Test



Obtain Strain

## Manufacture process



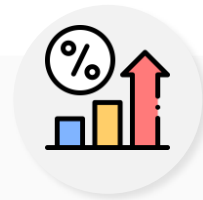
Quinoa Sprout

Increased Quinoa  
Nutrients through Natural  
Sprouting



Fermentation

Hydrolysis of Quinoa  
Protein using a Low-  
Carbon Process



17X Free Amino Acid

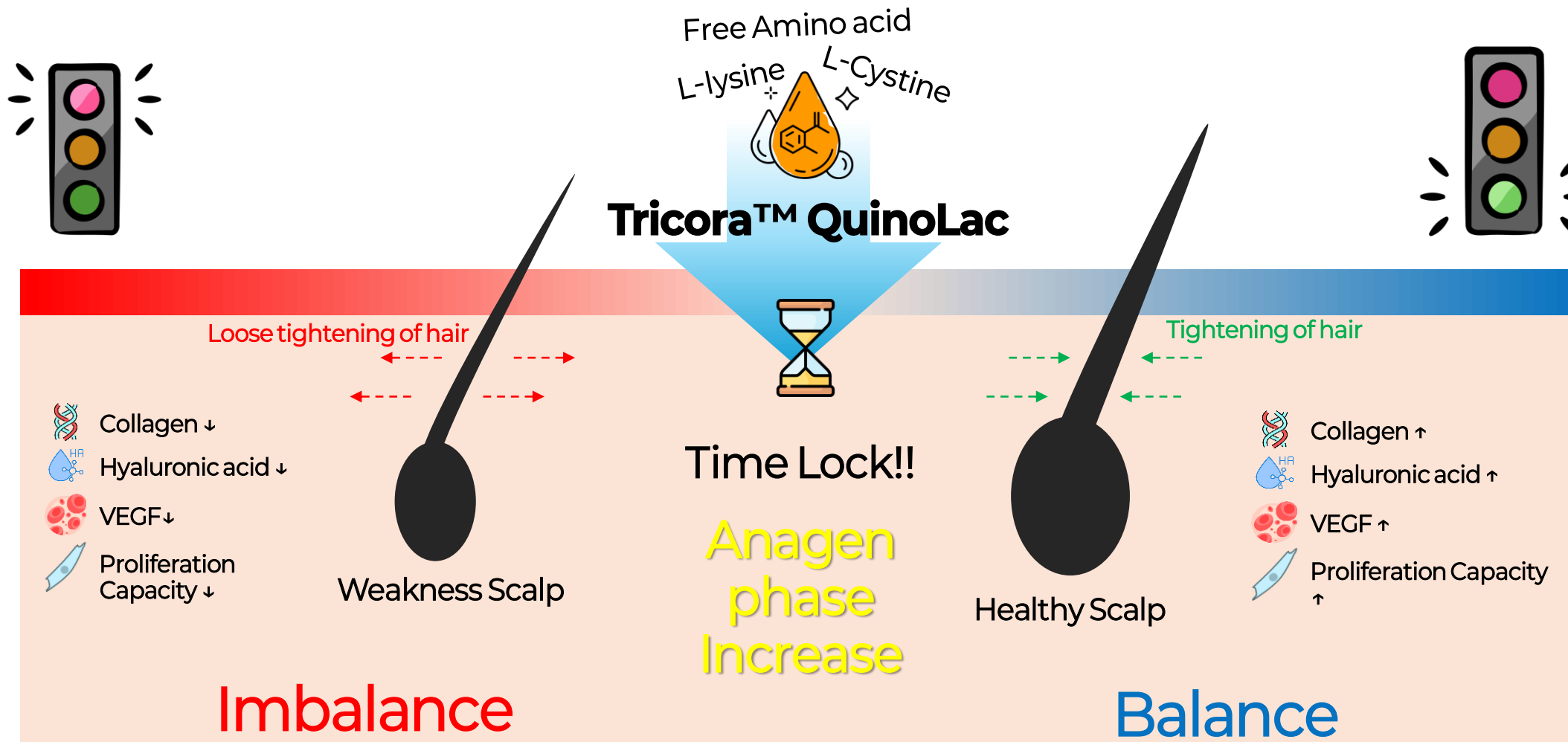
Confirmed 17x increase in  
free amino acids



Tricora™ QuinoLac

High Active Hair-care  
ingredient Tricora™  
QuinoLac

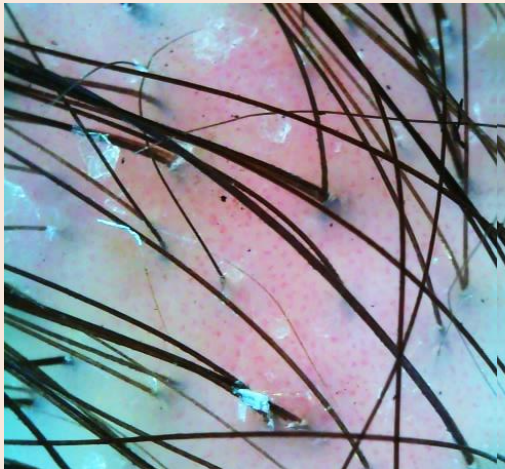
# TRICORA™ QuinoLac's Mechanism



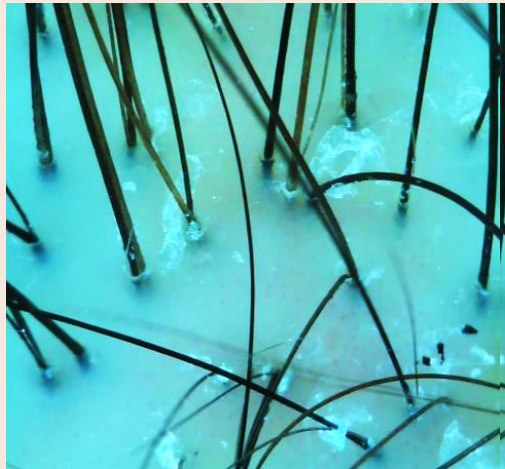
# In-Vivo: Scalp Care

**Subject** 20-60's 10 Males & Femlase  
**Period** 3 Months  
**Method** Apply 5% Tricora™ QuinoLac Shampoo 2 times per a day

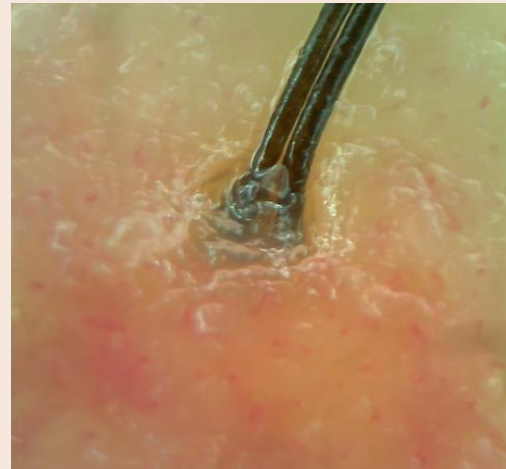
**\*\* Release Scalp Redness and Flaking\*\***



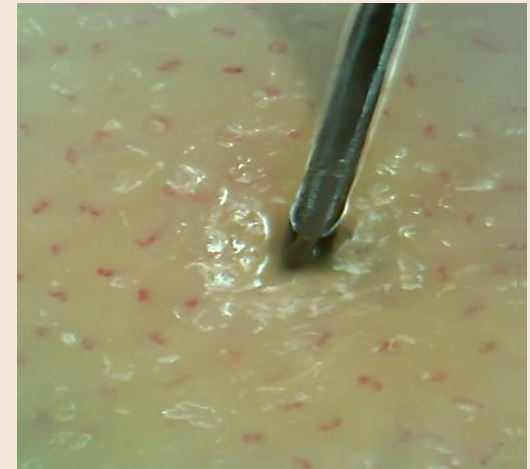
Before



After



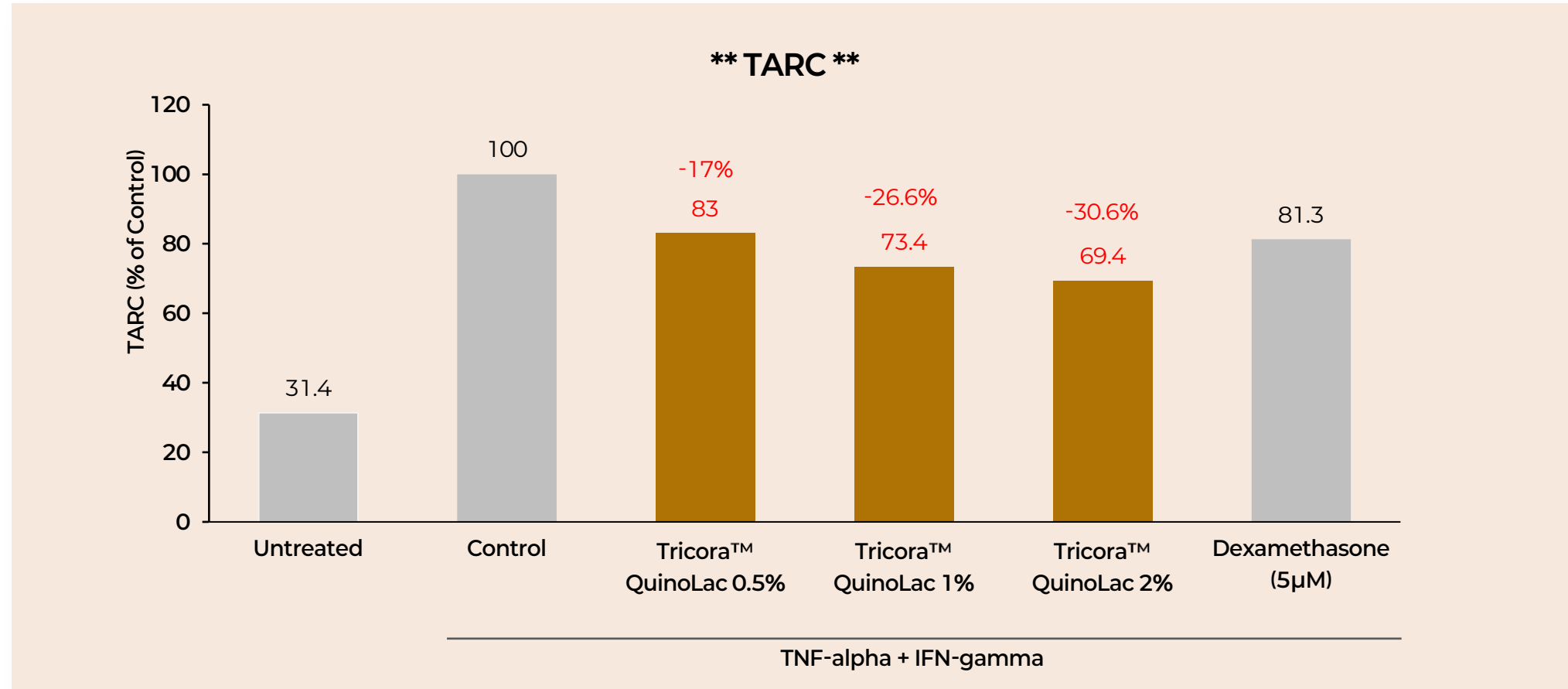
Before



After

# In-Vitro: Scalp Care (Anti Itching\_TARC)

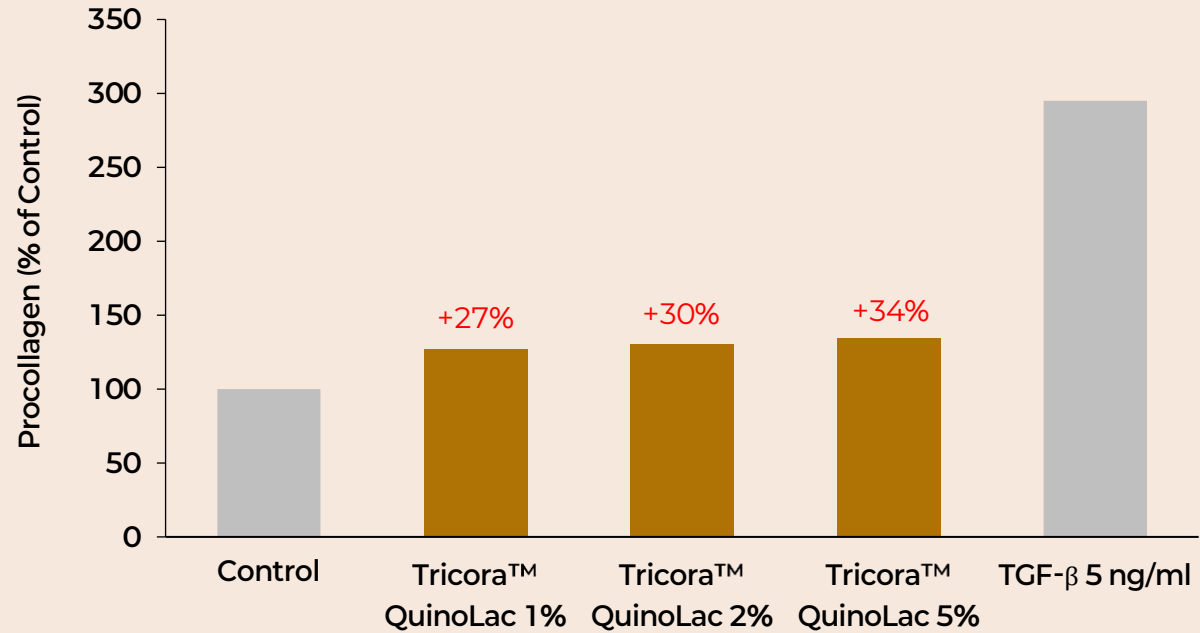
CELL	Human Dermal Fibroblast
Method	ELISA
Stimulation	TNF-alpha + IFN-gamma
Positive	Dexamethasone 5µM



# In-Vitro: Scalp Care (Procollagen)

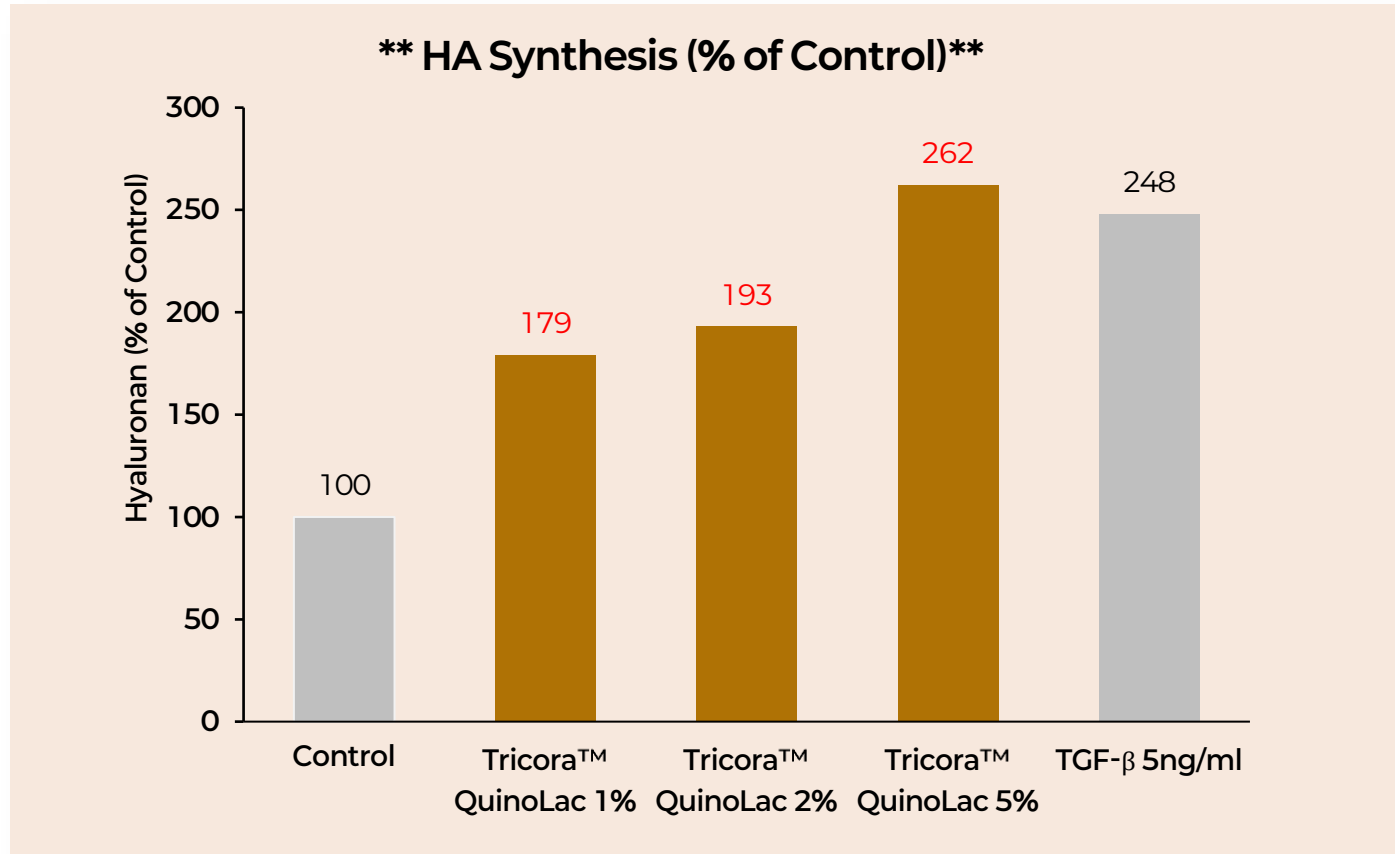
CELL	Human Dermal Fibroblast cell
Method	ELISA
Stimulation	N/A
Positive	TGF- $\beta$ 5 ng/ml

**\*\* Procollagen Synthesis (% of Control) \*\***



# In-Vitro: Scalp Care (Hyaluronic Acid synthesis)

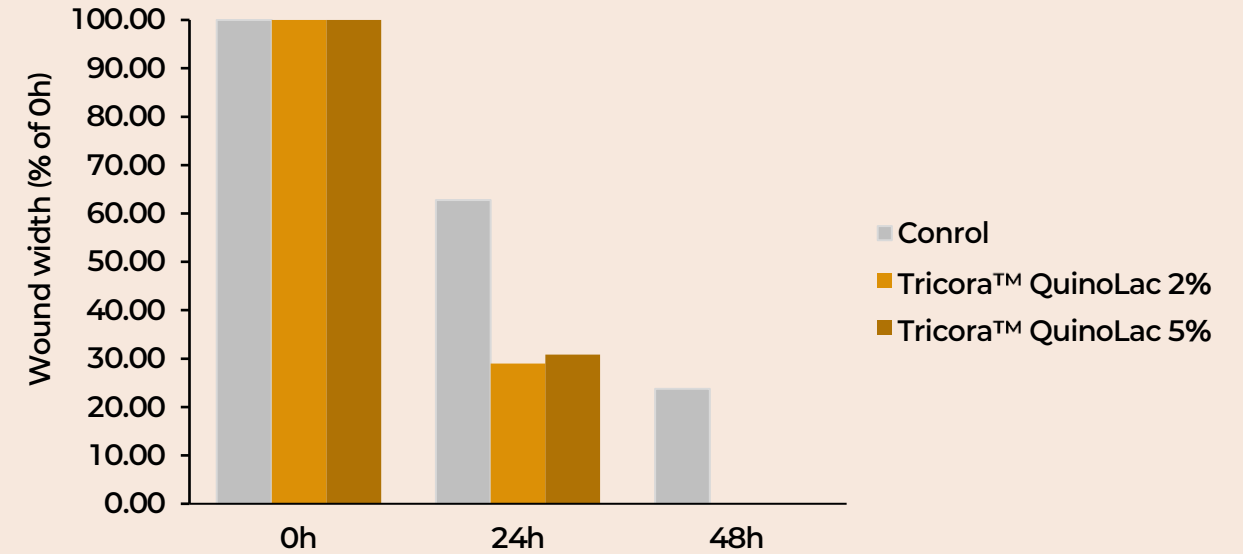
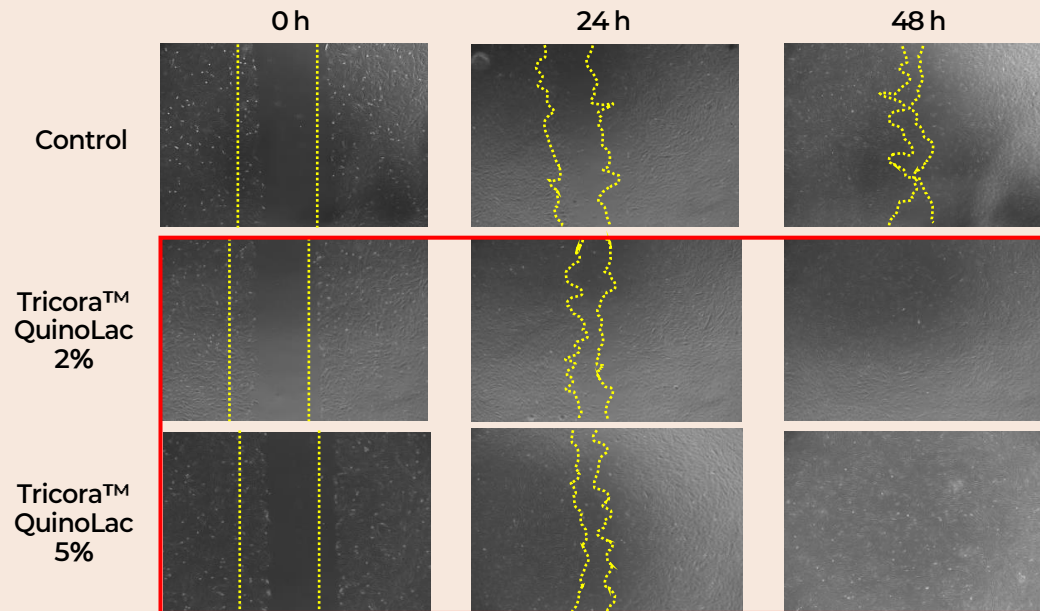
CELL	Human Dermal Fibroblast cell
Method	ELISA
Stimulation	N/A
Positive	TGF- $\beta$ 5 ng/ml



# In-Vitro: Scalp Care (Cell Regeneration)

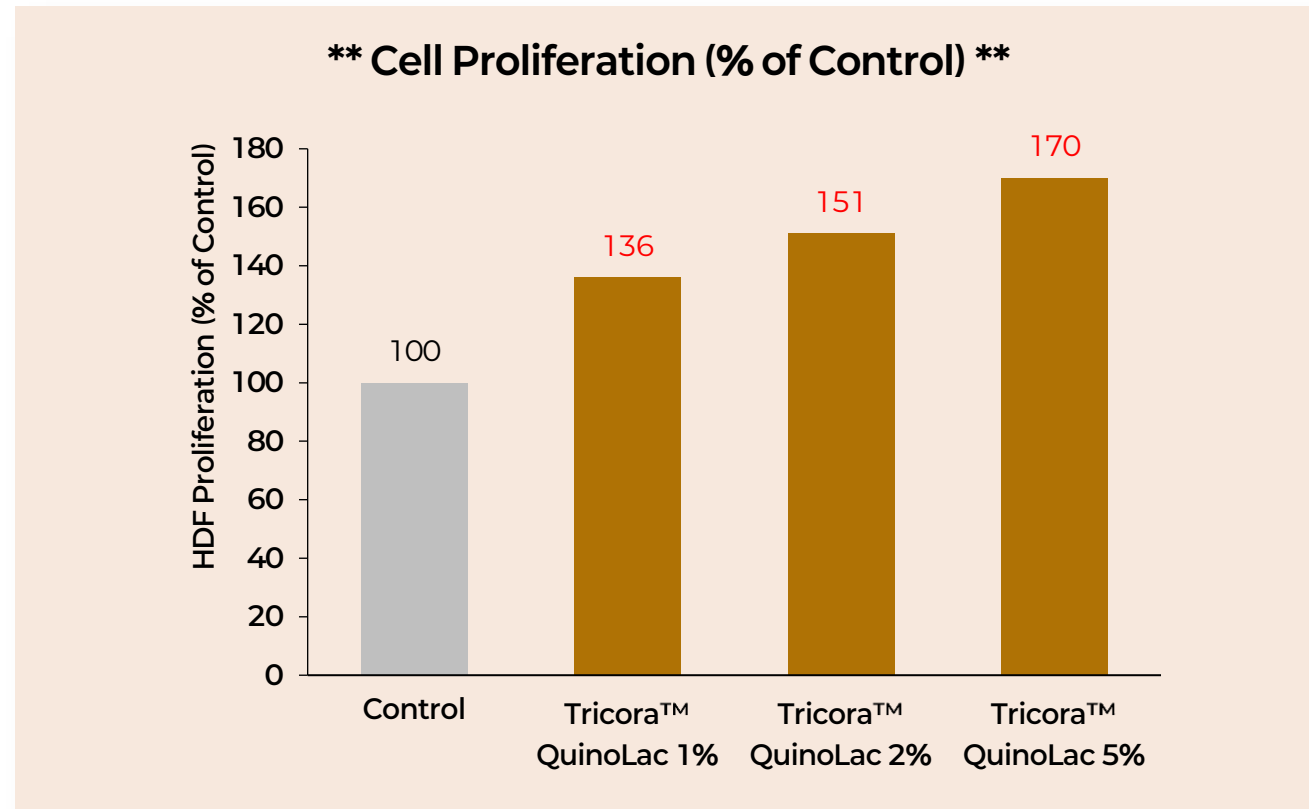
CELL	Human Dermal Fibroblast
Method	Microscope
Stimulation	N/A
Positive	N/A

## \*\* Cell Regeneration (% of Control) \*\*



# In-Vitro: Scalp Care (HDF Proliferation)

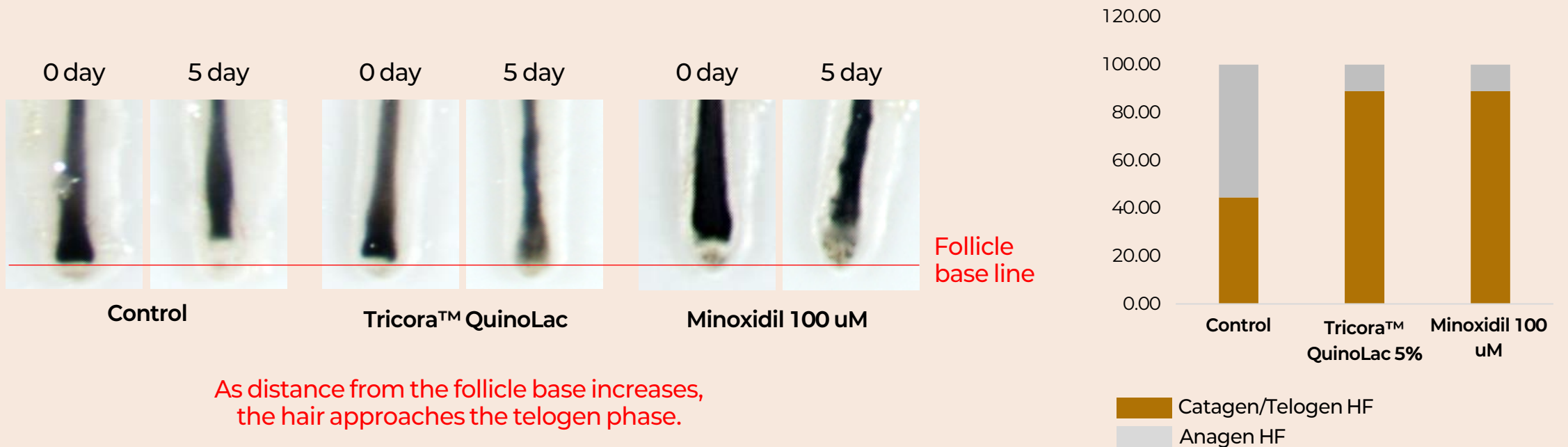
CELL	Human Dermal Fibroblast cell
Method	CCK-8
Stimulation	N/A
Positive	N/A



# Ex-Vivo: Anti-Hair Loss (Extension of Anagen)

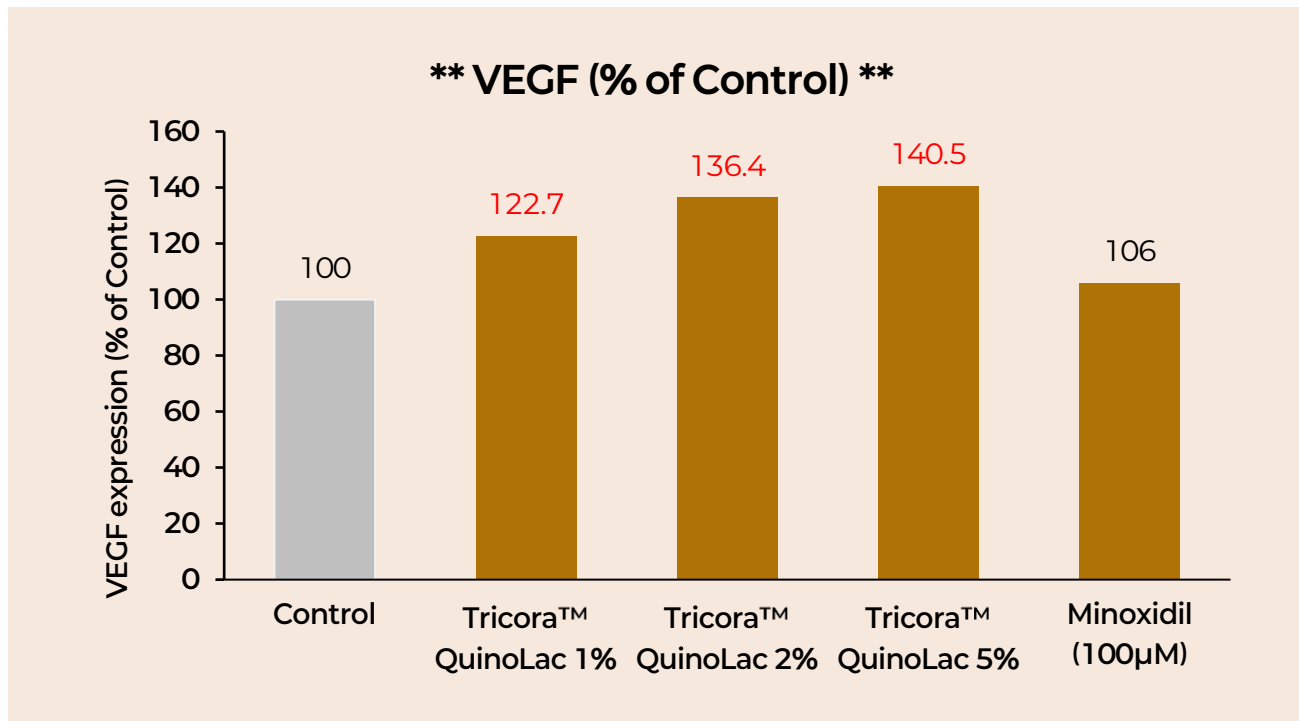
Subject	Human Follicle
Method	Evaluation of the Ratio of Anagen to Telogen Follicles (3 <sup>rd</sup> Party Institute)
Stimulation	N/A
Positive	Minoxidil 100uM

## \*\* Extention of Anagen & Shortening of Telogen \*\*



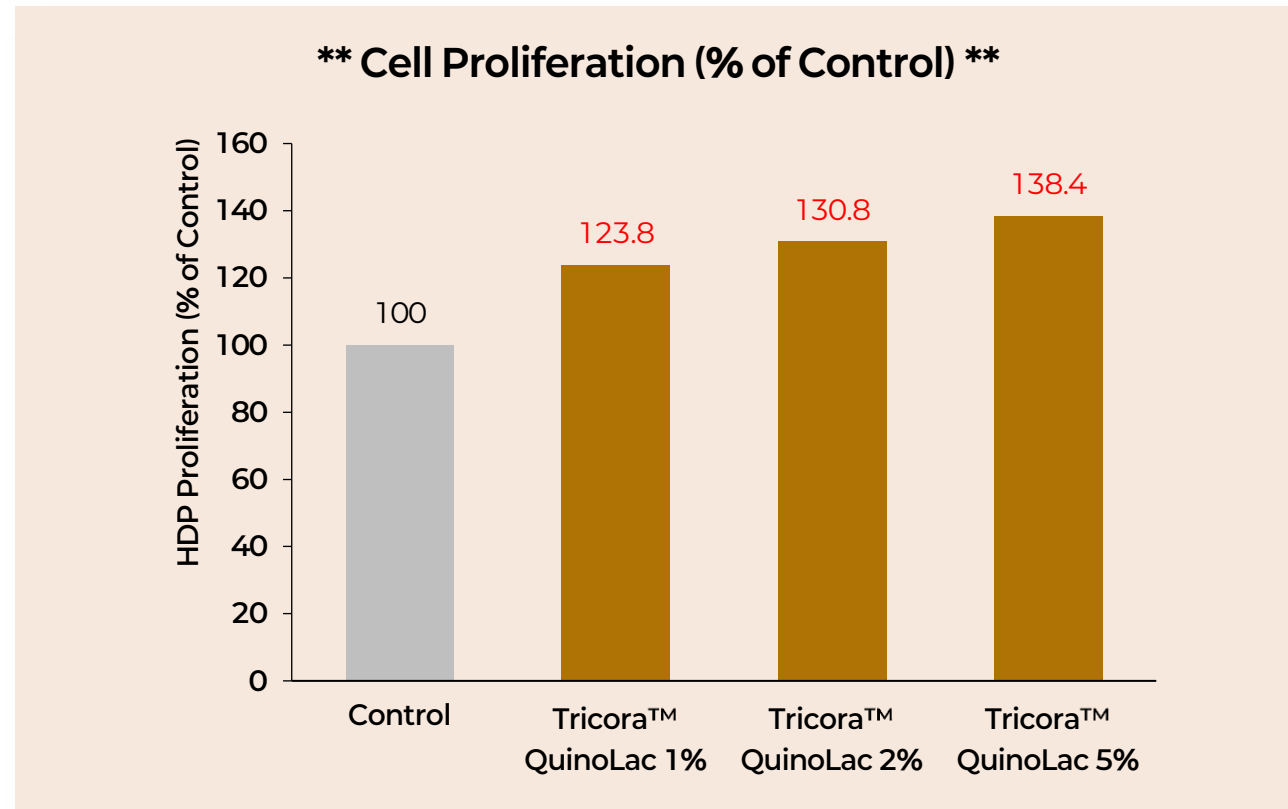
# In-Vitro: Anti-Hair Loss (VEGF Expression)

CELL	Human Dermal Papilla cell
Method	ELISA
Stimulation	N/A
Positive	Minoxidil 100uM



# In-Vitro: Anti-Hair Loss (HDP Proliferation)

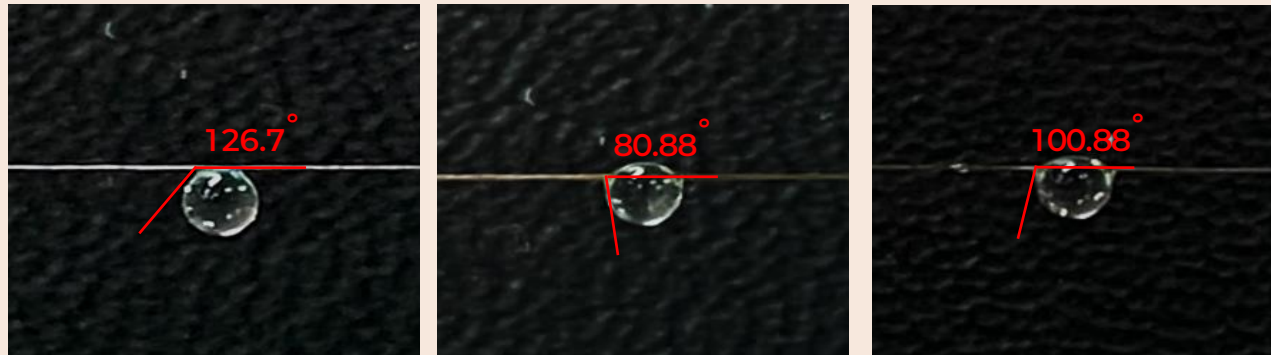
CELL	Human Dermal Papilla cell
Method	CCK-8
Stimulation	N/A
Positive	N/A



# In-Vivo: Hair Care (Hair Contact Angle)

Subject	Human Hair Shaft
Period	48Hours
Method	Measure the contact angle between Hair and DW after DW falls on fixed hair

## \*\* Hair Contact Angle \*\*



Healthy Hair

Healthy Cuticle

Damaged Hair

Increase absorption  
through Damaged Hair

Tricora™ QuinoLac 5%

Restore Hair Surface

# Patent

## Strain Patent

Accession No. : KCCM13229P

Strain : Lactobacillus plantarum M310090



BUDAPEST TREATY ON THE INTERNATIONAL RECOGNITION OF THE DEPOSIT OF MICROORGANISMS FOR THE PURPOSES OF PATENT PROCEDURE

INTERNATIONAL FORM

To: Morechem Co., Ltd.  
Tower-811, 605-607, Heungdeok IT Valley,  
13, Heungdeok 1-ro, Gilheung-gu,  
Yongin-si, Gyeonggi-do,  
Republic of Korea

RECEIPT IN THE CASE OF AN ORIGINAL DEPOSIT ISSUED PURSUANT TO RULE 7.1 BY THE INTERNATIONAL DEPOSITORY AUTHORITY identified at the bottom of this page

I. IDENTIFICATION OF THE MICROORGANISM	
Identification reference given by the DEPOSITOR: <i>Lactobacillus plantarum</i> M310090	Accession number given by the INTERNATIONAL DEPOSITORY AUTHORITY: KCCM13229P
II. SCIENTIFIC DESCRIPTION AND/OR PROPOSED TAXONOMIC DESIGNATION	
The microorganism identified under I above was accompanied by: <input type="checkbox"/> a scientific description <input type="checkbox"/> a proposed taxonomic designation (Mark with a cross where applicable)	
III. RECEIPT AND ACCEPTANCE	
This International Depository Authority accepts the microorganism identified under I above, which was received by it on August. 12. 2022 (date of the original deposit). <sup>1</sup>	
IV. RECEIPT OF REQUEST FOR CONVERSION	
The microorganism identified under I above was received by this International Depository Authority on (date of the original deposit) and a request to convert the original deposit to a deposit under the Budapest Treaty was received by it on (date of receipt of request for conversion).	
V. INTERNATIONAL DEPOSITORY AUTHORITY	
Name : Korean Culture Center of Microorganisms Address : Yurim B/D 45, Hongjeonae-2ga-gil Seodaemun-gu SEOUL 03641 Republic of Korea	Signature(s) of person(s) having the power to represent the International Depository Authority or of authorized official(s). Date: August. 12. 2022

<sup>1</sup> Where Rule 6.4(d) applies, such date is the date on which the status of international depository authority was acquired.

Form BP/4 (sole page)

## Product Patent

Application No.: 10-2023-0771868



공개특허 10-2024-0173059



(19) 대한민국특허청(KR)  
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(11) 공개번호 10-2024-0173059  
(43) 공개일자 2024년12월10일

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A61K 8/9789 (2017.01) A61K 8/9794 (2017.01)  
A61Q 5/00 (2006.01) A61Q 7/00 (2006.01)
- (52) CPC특허분류  
A61K 8/9789 (2017.08)  
A61K 8/9794 (2017.08)
- (21) 출원번호 10-2023-0071868
- (22) 출원일자 2023년06월02일  
심사청구일자 2024년06월12일

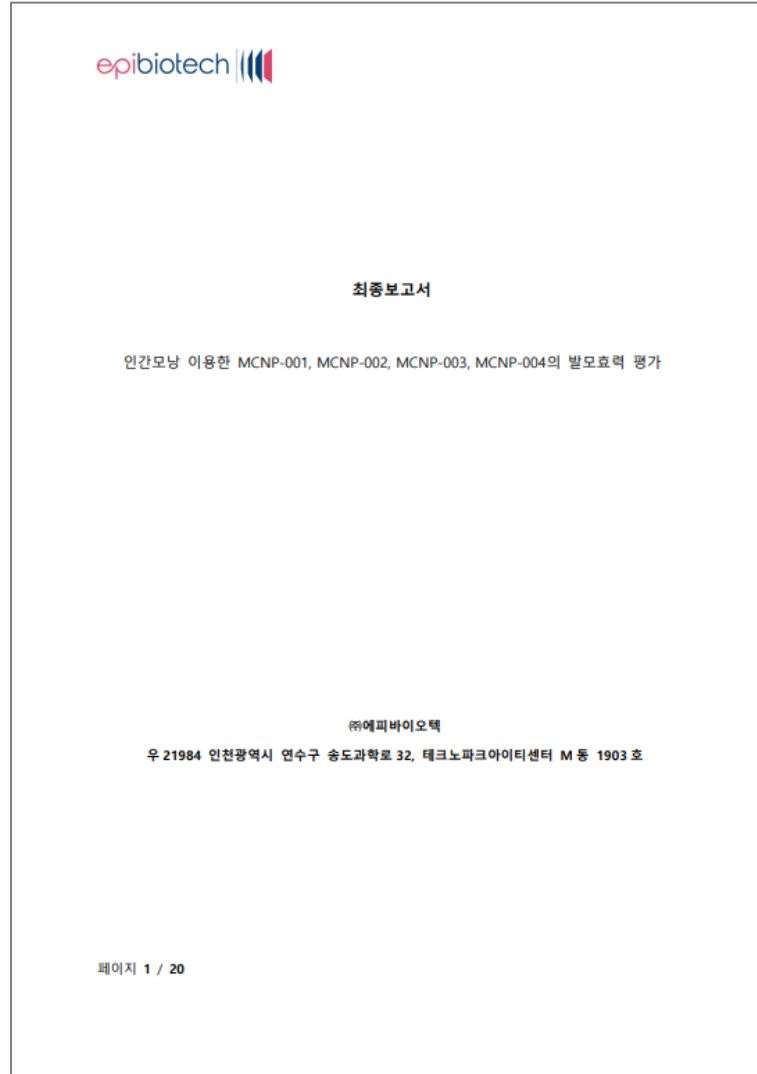
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- (74) 대리인  
윤앤리특허법인(유한)

전체 청구항 수 : 총 13 항

(54) 발명의 명칭 리쥬블락을 유효성분으로 함유하는 탈모 예방 및 헤어 케어용 화장품 조성물

# Ex-Vivo Test by 3<sup>rd</sup> Party Institute

Institute : epibiotech (Korea)



# Tricora™ QuinoLac

## Anagen Extension (Ex-vivo Test)

Control

Tricora™ QuinoLac



Follicle  
Start Line



## Release Skin Redness (Clinical Test)



Tricora™ QuinoLac

## Release Scalp Flaking (Clinical Test)



Tricora™ QuinoLac

### Ex-Vivo Test by Third Party

Tested by 3<sup>rd</sup> Party Institute (epibiotech)

### Patented for anti-hair loss

Korean Patent : KR 10-2023-0071868

### Patented Microbiome

Lactobacillus plantarum M310090

(Accession No. : KCCM13229P)

### 17x Free Amino Acids (120ppm)

Key Component of Hair : L-Cystine (60ppm)

Hair & Scalp Nutrition Supplement : L-Lysine (60ppm)

### CLEAN & CONSCIOUS INGREDIENT

Applying low carbon fermentation process

## Basic Information

Name	M102746-TRICORA™ QuinoLac
Origin	Fermented Quinoa
Expected Efficacy	Hair & Scalp care, Anti-Hair Loss
Appearance	Transparent Yellow ~ Dark Yellow Liquid
Odour	Characteristic
pH	2.0 – 5.0
<b>L-Cystine</b>	<b>≥ 60 ppm</b>
<b>L-Lysine</b>	<b>≥ 60 ppm</b>
Dosage	1 – 5%
Solubility	Water Soluble
Application	Shampoo, Hair Care Formulation

## Composition

		INCI	Content(%)
Main Active	Global(PCPC)	Lactobacillus Ferment	83.95
		Hydrolyzed Quinoa	4
	China(NMPA)	Lactobacillus Ferment	83.95
		Chenopodium Quinoa Seed Extract	4
Preservative	Butylene Glycol		10
	1,2-Hexanediol		2
	Ethylhexylglycerin		0.05



**Trichology**

The Study of hair and scalp

×

**era**

Phase, Context

# Tricora™

Tricora™ is Morechem's Cosmetic Ingredient Brand for Hair & Scalp Care.

It is compound word of Trichology (the study of hair) and Era (Phase, Context).

It is representing a new era of hair care created by Morechem.

Tricora™ offers Hair & Scalp Care ingredients proven by scientific evidence, with efficacy verified through objective studies.

# THANK YOU



Morechem Co., Ltd

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 02.588.7752  info@morechem.net  [www.morechem.net](http://www.morechem.net)

