



INNOVATIVE ELEMENTS TO AMELIORATE LIFE



ZLEY-PE601

– ELMTRIFUN –

World's First Plant-Derived Retinol from Elm Root Bark

Powered by Naturally Sourced Bakuchiol



WHO WE ARE

COMMITTED TO AMELIORATE LIVE, WITH TECHNOLOGY

Driven by a vision of innovation and development, we are dedicated to producing high-quality raw materials for the global personal care industry, addressing the growing demand for functional ingredients. Our products are designed to promote skin rejuvenation, brightening, antioxidant, and anti-inflammatory benefits.

「 1 2 3 」

1 factory located in Weinan, Shaanxi Province
2 Innovation research and development centers
3 subsidiaries: [China] Guangzhou [Hongkong]
and [Singapore] Over 200 employees

WHAT WE DO

COMMITTED TO AMELIORATE LIVE, WITH TECHNOLOGY

「Herbalism」

The cosmetic industry is actively exploring new neurocosmetic ingredients to enhance the connection between the skin and the nervous system. We harness plant extracts with soothing and anti-inflammatory properties to alleviate skin irritations, reduce redness, and support a healthier complexion.

「Metropolitan」

We are committed to continuously exploring innovative formulations for effective skin rejuvenation. Our team leverages advanced technologies and novel ingredients to push the boundaries and unlock new possibilities in this field.

「Revolution」

We utilize innovative technologies and ingredients to deliver exceptional results in skin brightening. Our ongoing research focuses on addressing pigmentation issues and promoting a radiant complexion.



PATENT CERTIFICATE

ZL 2022 1 1022382.9

Anti-inflammatory and Repairing Composition Containing Ethylene Glycol Salicylate and Its Preparation Method and Application

ZL 2022 1 1306298.X

Supramolecular Vesicle Aggregates of 4-Butylresorcinol and Their Preparation Method and Cosmetic Composition

ZL 2022 1 1147913.7

Microencapsulated Kava Extract and Its Preparation Method and Application

ZL 2016 1 0490027.2

Anti-Aging Cosmetic Composition and Its Preparation Method

ZL 2022 1 1648008.X

Composition Containing Amino Acid Derivatives for Regulating Skin Microbiota

ZL 2022 1 1038113.1

Anti-Acne, Whitening, and Antioxidant Essential Oil Composition Containing Ferulic Acid Derivatives and Its Preparation Method

ZL 2022 1 1187356.1

Composition for Skin Conditioning, Whitening, and Brightening, and Essence Lotion

ZL 2015 1 0077009.7

Preparation Method of High-Purity Piperazine

ZL 2023 1 0925891.0

Composition and Its Use in Improving Skin Barrier Function, and Skincare Product

ZL 2022 1 1251631.1

Liposomes Containing Ferulic Acid and Its Derivatives, Preparation Method, and Application

ZL 2015 1 0170034.X

Method for Synthesizing 2,4-Dihydroxyacetophenone and Recycling Wastewater

ZL 2014 1 0245210.7

Preparation Method of Half-Fumarate Quetiapine

ZL 2023 1 1500453.6

Deodorizing Composition, Its Preparation Method, and Application

ZL 2023 1 1366456.5

Peony Root Bark Extract-Based Perfume with Lemon Fragrance, Preparation Process, and Application

ZL 2024 1 0785149.9

Preparation Method of Highly Active Trigonella Extract and Its Uses in Care Products

ZL 2024 1 0726523.8

Preparation Method of Hydroxypinacolone Retinoate

ZL 2024 2 1028204.1 (Utility model patent)

Ultrasonic Cleaner for Cosmetic Testing

ZL 2024 1 0576240.X

Composition for Reducing Periorbital Skin Issues, Its Preparation Process, and Application

MORE PATENT APPLICATIONS ARE PENDING...



I&D STRENGTH

「BIRI」 (Biotechnology Innovation Research Institute)

Our team of experienced biologists leads the R&D efforts to identify active skincare ingredients with proven efficacy, high potency, and stability through experimental protocols, strain culture, and fermentation optimization.

Our facility adheres to the national laboratory safety standards GB 19489-2011, including P2 and biochemical laboratory requirements.

「FOSCRC」 (Functionality of Skin Care Research Center)

As society progresses and technology advances, there is a growing demand for effective skin care and a deeper understanding of cosmetics. At our Functional Skincare Research and Development Center, we focus on exploring skincare products through chemical testing and cell assays to study their functions and properties.

「FOSCTEC」 (Functionality of Skin Care Testing&Evaluation Center)

We partner with a professional third-party testing institute specializing in cosmetics, cosmetic raw materials, and pharmaceutical intermediates to ensure rigorous and reliable product testing.



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Part . 01

「MARKETING ANALYSIS」



「MARKETING ANALYSIS」

ZLEY HOLDINGS | FOCUS ON MAKING PREMIUM QUALITY RAW
MATERIALS IN THE WORLD

「BAKUCHIOL ON THE RISE」

On August 26, 2022, Bakuchiol was officially registered as a cosmetic ingredient. As a popular retinol-like active, its maximum allowed concentration is 2%. According to publicly available information, Bakuchiol was first synthesized in 1973, but it was not commercialized until 2007 in certain countries and regions. It was later launched by Sytheon under the product name Sytenol®A.

At the end of October, TOUXING introduced the first Bakuchiol-based skincare product in China, the Bakuchiol Cream. It is a gentle anti-aging cream designed for oily and sensitive skin, featuring benefits such as strengthening the skin barrier, balancing oil and moisture, and improving wrinkles and firmness.



国家药品监督管理局

National Medical Products Administration



数据查询



首页



网上办事大厅

国化妆品原料备案信息 —— “国妆原备字20220027” 基本信息

标准中文名称	补骨脂酚
备案号	国妆原备字20220027
备案人中文	赛胜公司
备案人外文	Sytheon Corporation
备案人住所地址	新泽西, 邦顿区, 伍顿街315号
备案人所在国 (地区)	美国
境内责任人名称	上海优添实业有限公司
境内责任人住所地址	上海市中山西路2006号宜山百第大厦1幢1005室
备案日期	2022-08-26 00:00:00
备注	
状态	监测期
技术要求	查看 
备案后监督检查情况	
 注	详情

Figure 1 Bakuchiol Ingredient Registration Information

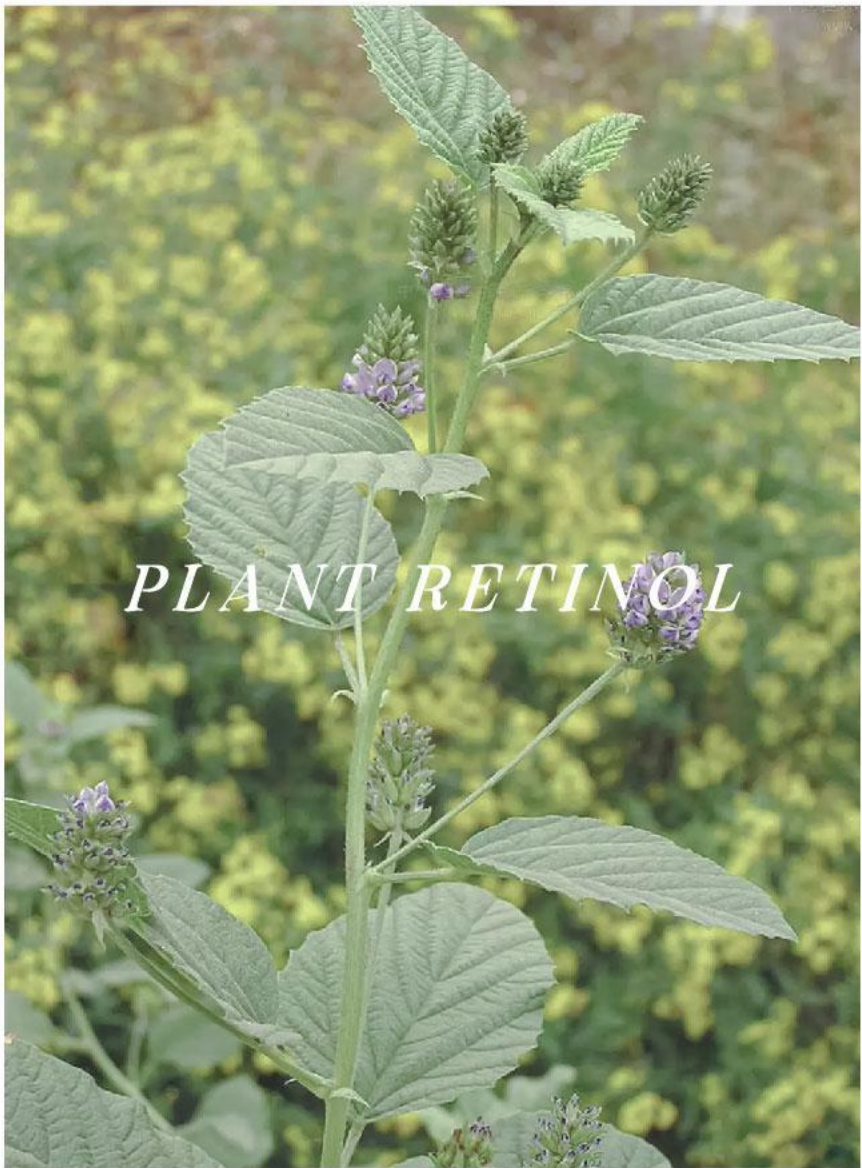


Figure 2 Bakuchiol Cream by TOUXING

*资料来源：【天猫新品创新中心】敏感性皮肤精细化护肤趋势白皮书

「COMMON PLANT-BASED RETINOL ALTERNATIVES」

As retinoid-based products reach peak market saturation, a new trend of plant-derived retinol alternatives has emerged. Although their structures vary, they are fundamentally developed around Retinol and its derivatives. These alternatives aim to minimize irritation while delivering effects comparable to retinoids.

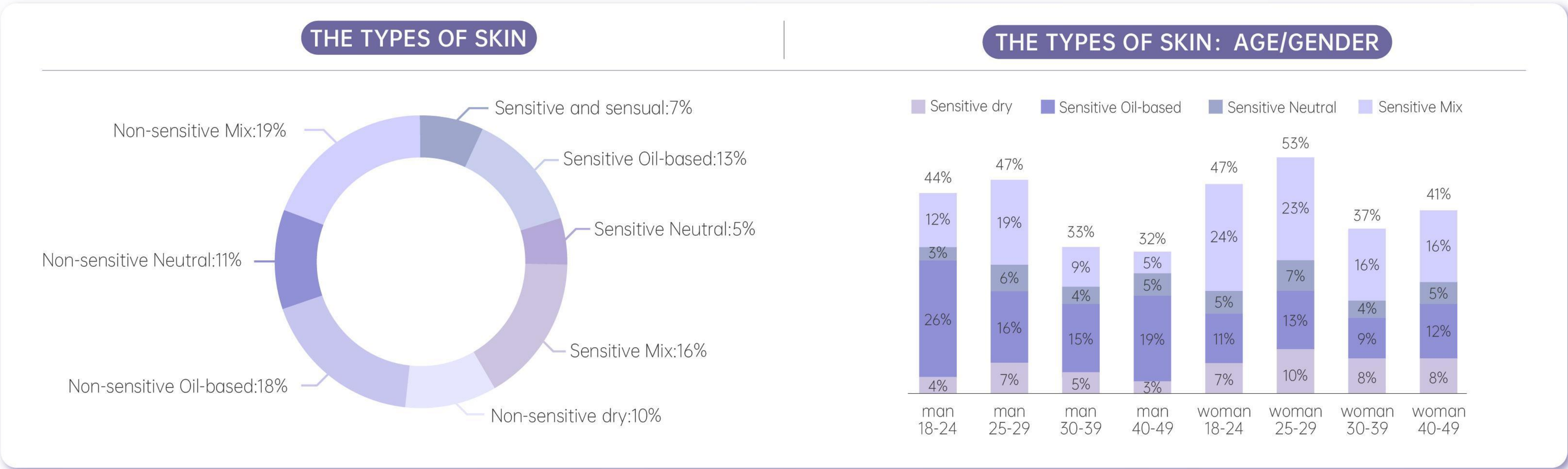


Plant-derived Retinols	Brand Application
Bakuchiol	KATE Oxygen Infusion Essence; Avène Bakuchiol Anti-Aging Serum
Bidens Pilosa Extract	REN Clean Skincare Bio Retinoid Oil
Vigna Aconitifolia Seed Extract	Kiehl’s Super Multi-Corrective Cream
Harungana Madagascariensis Extract	Chanel Sublimage Cleansing Gel; Clarins Total Eye Lift
Medicago Sativa Extract	Elizabeth Arden Ceramide Capsules
Rubus Fruticosus Leaf Extract	Fresh Black Tea Firming Serum
Silybum Marianum Extract	Spring Letter Vitamin A Firming Eye Cream
Iris Florentina Root Extract	Zhiben

* DATA Source:Beauty Data AI.

「COMMON PLANT-BASED RETINOL ALTERNATIVES」

According to the report named Chinese Market New Trend In Anti-aging Skincare from Mintel,the highly proportion of consumers who self-judge as having sensitive skin is 41%,The volume of sensitive-skin-type people is constantly increasing and becoming normalization.Among these sensitive-skin-type groups,females who are 25-29 years old have the highest proportion of 53%.The following data is the proportion of 18-24 years-old females ,which is 47%.



*DATA source:Chinese Market New Trend In Anti-aging Skincare,2020.By Mintel

「EFFICIENCY AND SAFETY COEXIST」

With the continous development of technology and innovation,as well as to meet the increasing demand of consumers for whitening and anti-aging, Gentler, safer and more effective ingredients continue to emerge.

 Highly irritating, need to build up skin tolerance	 Need to be protected from light and cannot be used during the day	 Risky ingredients, harmful to health
 Gentle and no-irritating,No Need To build up skin tolerance	 Anti-photosensitive ingredients, can use it in the day or night	 Ingredients upgrade increasingly,safety go with efficiency

Safety mentioned in **15%** of consumer reviews

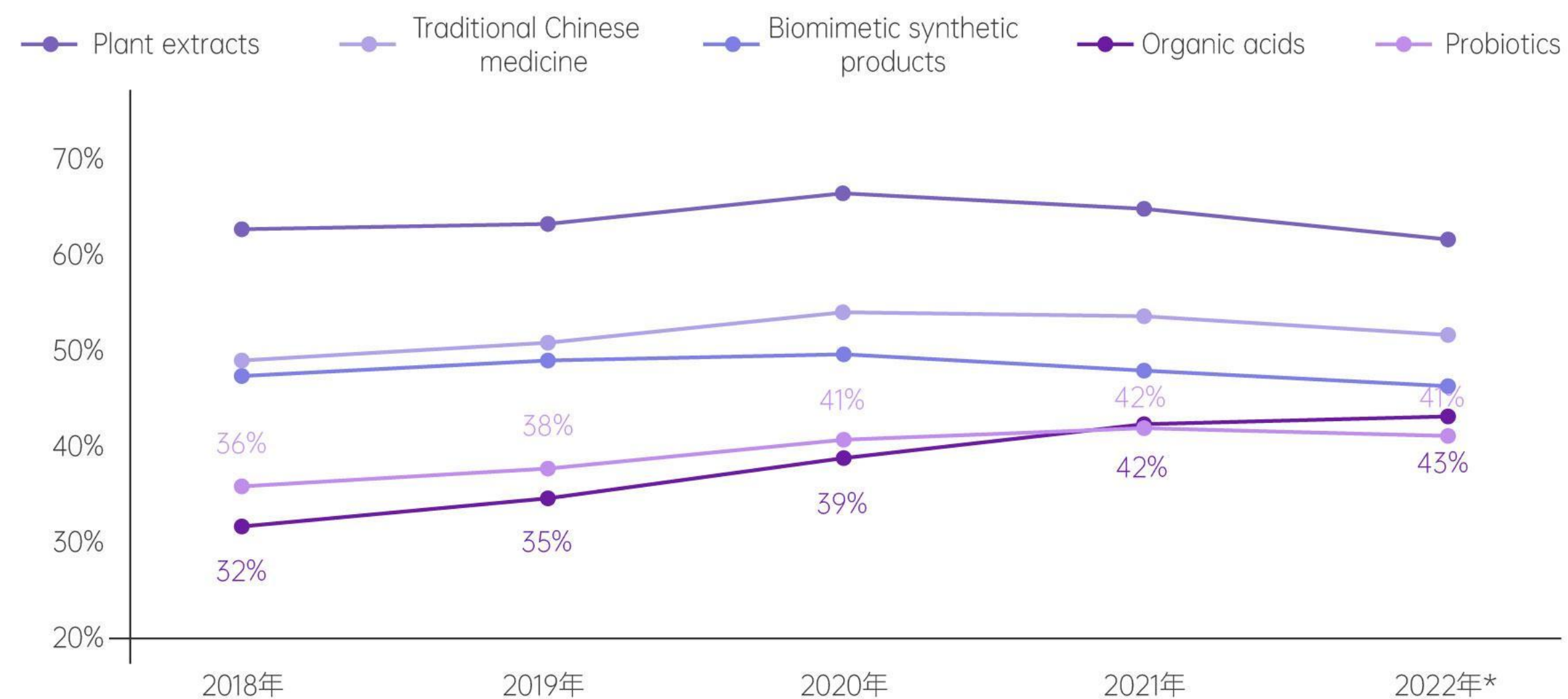
* Data source:New Insight: Decoding the Whitening and Speckle Market.Beauty Evolution Database

「"NATURAL" AND "BOTANICAL" INGREDIENTS TRENDING」

Cosmetics regulations explicitly encourage and support the application of modern science and technology in the research and development of cosmetics, combined with my country's traditional strengths and unique plant resources.

Currently, plant extracts and traditional Chinese medicine are two major popular raw material types this year, widely used in skincare products. Many domestic and international brands include natural plant extracts as one of their core ingredients. Examples include Forest Cabin's camellia extract, Winona's prickly pear extract, Guyu's licorice root extract, and Osmun's pearl extract.

CHANGES IN THE USAGE PERCENTAGE OF TOP POPULAR INGREDIENT TYPES OVER THE PAST FIVE YEARS



Brand	Core Natural & Plant-Based Ingredients
Simpicare	Wild Matsutake from Shangri-La, Yunnan
Natural Hall	Himalayan Glacial Water & Gentian
Winona	Yunnan Prickly Ash & Camellia
Pechoin	Cordyceps Sinensis, Ganoderma Lucidum & Ginseng
Yuesai	Qinghai Snowy Cordyceps & Anhui Ganoderma Lucidum
Inoherb	Sichuan-Tibet Rhodiola Rosea & Lanzhou Lily
Forest Cabin	Camellia
Guyu	Licorice Root
Osmun	Pearl

* Data Source: 美业颜究院

THE CONCEPT OF CLEAN BEAUTY COMES OUT,FOCUSING ON NATURAL AND GREEN,MILD AND ECO-FRIENDLY



Major Beauty Groups join in the clean beauty market and domestic niche clean beauty brand quickly developed by gaining financing.Clean Beauty centers on the concept of Natural and Green,Mild and Eco-friendly,these concepts just meet the needs of increasingly sensitive-skin market,at the same time,more acceptable for consumers.

Brands	Category	Nation	Financing/Acquisition
REN	SKINCARE	England	Acquisited by Unilever
Tatcha	SKINCARE	America	Acquisited by Unilever
Drunk Elephant	SKINCARE	America	Acquisited by Shiseido
Farmacy	SKINCARE	America	Acquisited by P&G
Grown Alchemist	SKINCARE	Australia	Acquisited by L'Occitaner
Snowberry	SKINCARE	New Zealand	Acquisited by P&G
Physiogel	SKINCARE	America	Acquisited by LG
LAN	SKINCARE	China	Financing 200 million RMB
Dewy Lab	SKINCARE	China	Financing USD 100 billion
BYBI	SKINCARE	England	Financing USD 7 million
TOKIA	SKINCARE	China	Financing Hundreds of billions of RMB

*数据源于：巨量算数《2022美妆成分趋势洞察报告》

Part . 02

「PRODUCT INTRODUCTION」

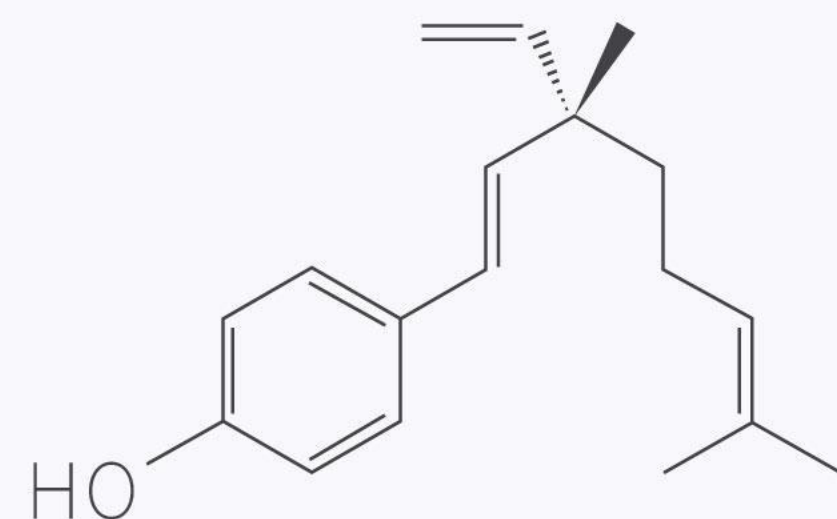


「PRODUCT INTRODUCTION」

ZLEY HOLDINGS | FOCUS ON MAKING PREMIUM QUALITY RAW
MATERIALS IN THE WORLD

「ZLEY®PE601-ELMTRIFUN」

Ulmus davidiana var. Japonica is in the family Uimacece. In North Korea, South Korea and China, Ulmus davidiana var. japonica has been used as a traditional oriental medicine for the treatment in skin inflammation. The plant has been reported to have anti-oxidant and anti-inflammatory properties.



「Bakuchiol」

ZLEY®PE601-ELMTRIFUN contains Ulmus Davidiana Root Extract, Butylene Glycol, Water. It's preservative-free.

Ulmus davidiana root extract is a skincare ingredient derived from the Ulmus davidiana tree. The active factor of the extract is bakuchiol, a monoterpene, with a wide range of pharmacological activities.

According to the studies, bakuchiol has lots of good properties such as anti-inflammation, anti-aging, antioxidation. It also has whitening, brightening, repairing and acne-fighting effect.

In the last few years, there is an increasing amount of researches on Bakuchiol. It attracts lots of people's attention because of the beauty and skincare function.

ULMUS DAVIDIANA ROOT EXTRACT — NATURAL SOURCE OF BAKUCHIOL



Ulmus davidiana var. japonica is in the family Ulmaceae. In North Korea, South Korea and China, Ulmus davidiana var. japonica has been used as a traditional oriental medicine for the treatment in skin inflammation. The plant has been reported to have anti-oxidant and anti-inflammatory properties.

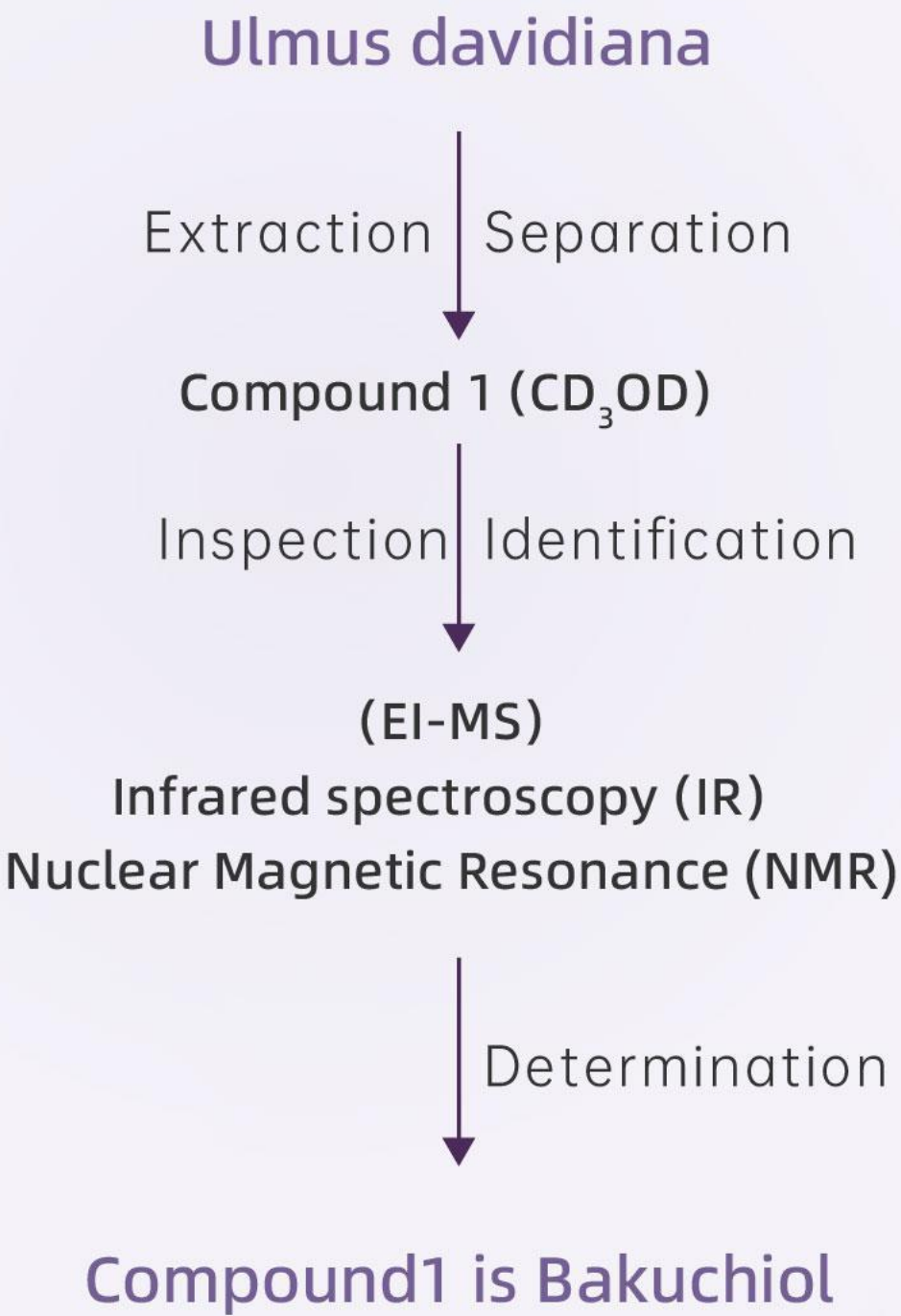


Figure 1
(EI-MS) (m/z)
256 (M+ , 40%)
213 (33%)
173 (100%)
158 (42%)
145 (65%)
107 (100%)

Figure 2
Infrared spectroscopy (IR)
ν _{max} (KBr) cm ⁻¹
3363 (O-H)
2965 (C-H)
1609 (C=C)

Figure 3 ¹H and ¹³C-NMR Spectroscopic data

Number	δH	δC
1	—	131.1
2	7.18 (1 H, d, J=8.5 Hz)	128.4
3	6.71 (1 H, d, J=8.5 Hz)	116.4
4	—	157.9
5	6.71 (1 H, d, J=8.5 Hz)	116.4
6	7.18 (1 H, d, J=8.5 Hz)	128.4
7	6.23 (1 H, d, J=16.2 Hz)	135.9
8	6.02 (1 H, d, J=16.3 Hz)	128.3
9	—	43.6
10	1.95 (2 H, m)	42.8
11	1.48 (2 H, m)	24.5
12	5.12 (1 H, br t, J=6.0 Hz)	126.2
13	—	132.1
14	1.66 (3 H, s)	17.8
15	1.57 (3 H, s)	26.0
16	1.19 (3 H, s)	24.1
17	5.90 (1 H, dd, J=10.8, 18.0 Hz)	147.6
18	5.02 (2 H, m)	112.3

* Ref: Isolation and Anti-Inflammatory Activity of Bakuchiol from Ulmus davidiana var. japonica.

「BAKUCHIOL — PLANT-BASED RETINOL ALTERNATIVE」

Molecular labeling of retinol and bakuchiol

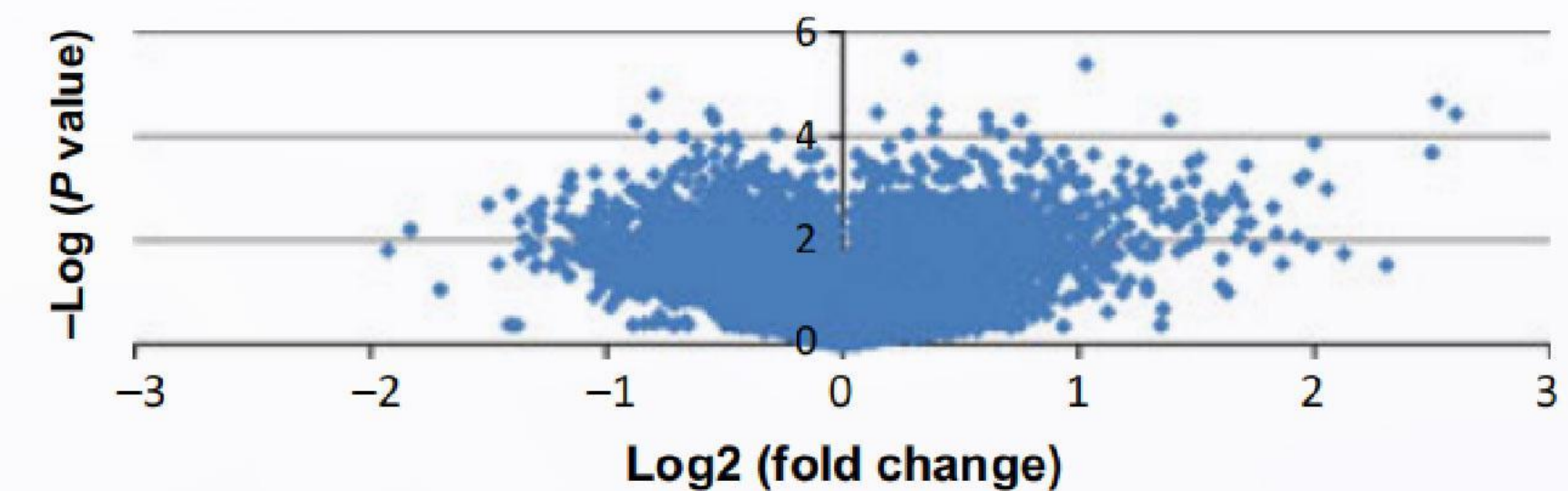


Whole epidermal tissue DNA microarray studies

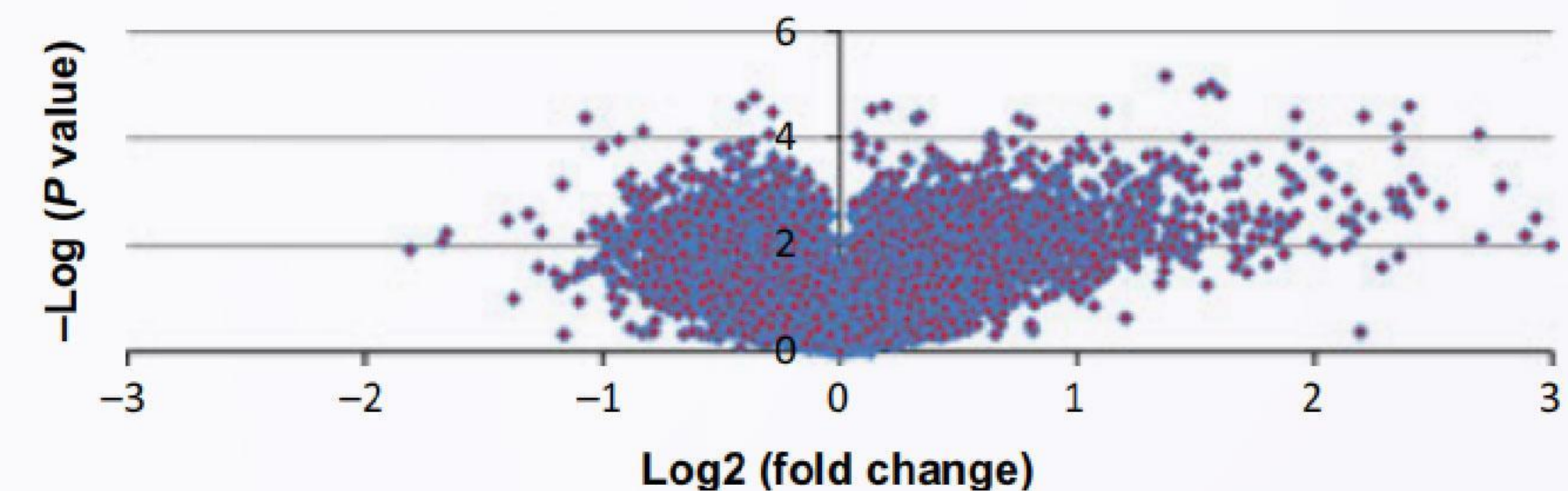


Volcano plot shows that the gene expression profiles of the two compounds---retinol and bakuchiol were very similar, indicating functional similarity.

Volcano plot of Retinol-DNA microarray data



Volcano plot of bakuchiol-DNA microarray data



「BAKUCHIOL — PLANT-BASED RETINOL ALTERNATIVE」

Gene	Expression (Retinol: R) (Bakuchiol: B)
CRBP I	R=2.6; B=4.2
CRBP II	R=NS; B=4.1
CRBP IV	R=NS; B=3.1
N6AMT2	R=NS; B=-2.1
TIG1	R=13.2; B=12.9
DHRS9	R=5.5; B=11.6
RETSAT	R=-2.9; B=-2.8
LRAT	R=12.3; B=82.2
CYP1A1	R=4.0; B=4.9
CYP1A2	R=3.6; B=6.7
RARB	R=5.6; B=NS
RARG	R=1.8; B=NS

DNA Microarray Study on Retinoic Acid Binding and Metabolic Genes

①DHRS9 behaves significantly better than retinol:

conversion of bakuchiol to vitamin A acid is more efficient.

②N6AMT2 performs worse than retinol:

Bakuchiol may decrease the cytotoxicity of vitamin A acid.

③No expression on RARB (retinoic acid receptor beta-1) and RARG (retinoic acid receptor gamma-1):

Bakuchiol could not have the side effects of retinol.

④LRAT (lecithin-retinol acyltransferase) performe significantly better than retinol:

Lecithinol can increase the availability of endogenous retinol.

* Ref: Bakuchiol: a retinol-like functional compound revealed by gene expression profiling and clinically proven to have anti-aging effects.

「BAKUCHIOL — PLANT-BASED RETINOL ALTERNATIVE」

Gene		Expression (Retinol: R) (Bakuchiol: B)
Collagen	COL1A2	R=3.3; B=1.9
	COL4A6	R=6.4; B=11.2
	COL9A2	R=5.6; B=6.7
	COL9A3	R=4.1; B=5.8
Elastic Fibers	EMILN3	R=2.2; B=9.1
	EMILN1	R=-3.4; B=-2.4
	PI3	R=2.5; B=2.7
Fibronectin	FLRT2	R=NS; B=13.9
	FLRT3	R=2.8; B=6.1
Hyaluronic acid(HA)	HAS3	R=10.8; B=19.2
Water channel protein	AQP3	R=3.5; B=4.3

DNA Microarray Analysis —
Genes Regulating Extracellular Matrix (ECM) Components

Gene		Expression (Retinol: R) (Bakuchiol: B)
Collagen	COL4A6	R=6.4; B=11.2
	COL17A1	R=3.6; B=8.7
Plectin	PLEC1	R=2.7; B=6.8
Integrin	ITGB4	R=3.5; B=8.0
	ITGB6	R=7.5; B=7.7
	ITGB8	R=0; B=-3.9
	ITGA6	R=0; B=3.6
Laminin	LAMA3	R=4.7; B=11.0
	LAMC2	R=2.7; B=7.8
E-cadherin	CDH1	R=9.4; B=21.6

DNA Microarray Analysis —
Genes Regulating Basement Membrane (DEJ) Components

* Ref: Bakuchiol: a retinol-like functional compound revealed by gene expression profiling and clinically proven to have anti-aging effects.

Part . 03

「MECHANISM OF ACTION」

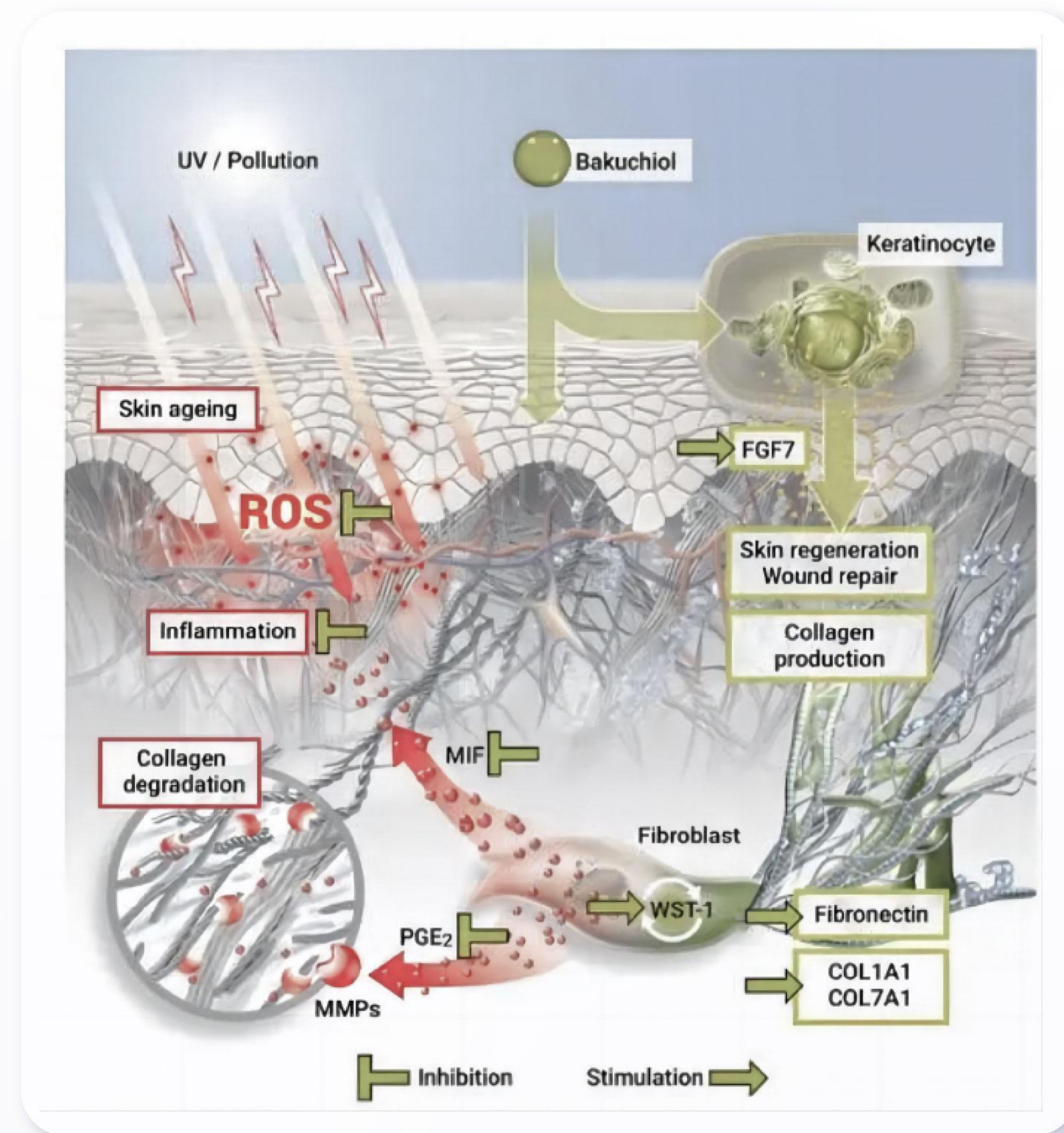


「MECHANISM OF ACTION」

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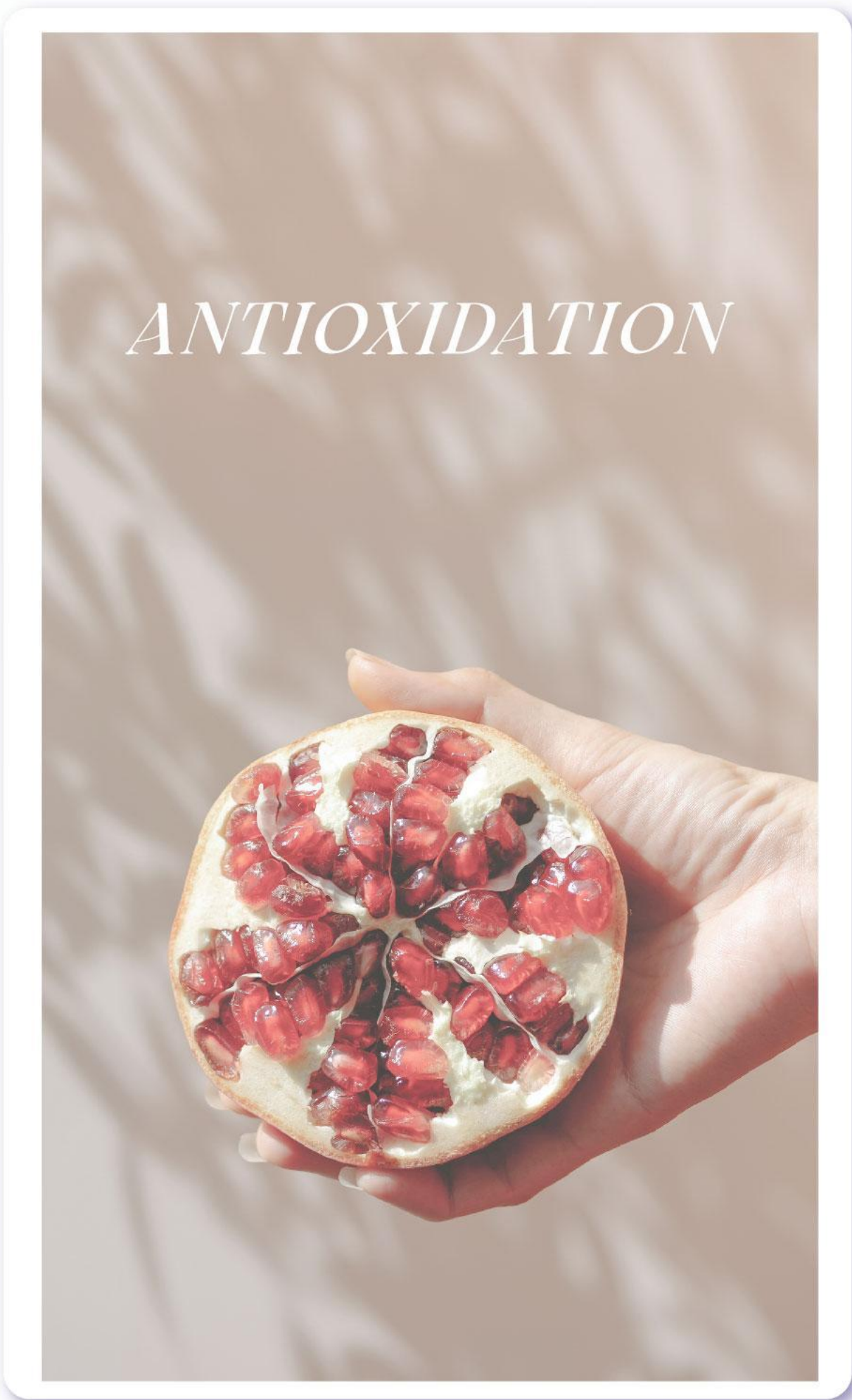
ANTI-AGING

- ①Bakuchiol regulates the retinoic acid receptor and related genes such as CIBP1 (Retinol Binding Protein 1) and TIG1, which are involved in retinol transport and binding, activating the retinol signaling pathway of vitamin A.
- ②Bakuchiol promotes the expression of anti-aging gene ESF-1, leading to increased proliferation of ESF-1 cells (human skin fibroblasts) and elevated levels of TIMP-2 while reducing MMP-1, thereby decreasing collagen degradation and promoting the synthesis of type I, III, and IV collagen in the skin.
- ③Bakuchiol could promote the gene expression of HIF-1 α (hypoxia-inducible factor) and SIRT-1 also known as longevity genes.
- ④Bakuchiol helps prevent UV damage to the skin by regulating the expression of genes such as p53 and caspase-3, providing protective effects against apoptosis in HaCaT cells.
- ⑤ Promotes the expression of extracellular matrix (ECM) proteins and repairs the dermal-epidermal junction (DEJ): upregulates the expression of collagen, integrin, fibronectin, and elastin.
- ⑥ Inhibits the phosphorylation levels of protein kinases involved in the regulation of inflammatory factors in vivo, such as ERK or p38 in the MAPK signaling pathway, thereby counteracting inflammaging.



*Ref: 朱荟彬.补骨脂酚在化妆品领域的研究进展[J].药物资讯, 2019, 8(4): 149-153.

Ref: Bakuchiol: a retinol-like functional compound revealed by gene expression profiling and clinically proven to have anti-aging effects.



ANTIOXIDATION

①Bakuchiol, as a fat-soluble antioxidant, is more potent than vitamin E.

	Peroxides	Hydroxyl group	Superoxide	Peroxynitrate	Singlet Oxygen IC ₅₀ (μg/ml)	lipid peroxideb IC ₅₀ (μg/ml)
Bakuchiol	15165	569	204	130	1325	0.5
Tocopherol	813	None	None	1	1100	30

②The phenolic hydroxyl group in bakuchiol can capture lipid peroxy radicals, and the conjugated double bonds can stabilize the bakuchiol radicals.

③It inhibits lipid peroxidation induced by tert-butyl hydroperoxide (tBH-), carbon tetrachloride (CCl4), and D-galactosamine (D-GalN), and also prevents depletion of intracellular glutathione, thereby enhancing cellular vitality

④It inhibits lipid peroxidation induced by various oxidative radicals, such as Cl3CO2, LOO-, DPPH radicals, and OH-.

⑤It acts as a mitochondrial protector by preserving respiratory enzyme activity, preventing damage caused by the reaction of reduced coenzyme II (NADPH) with hydroxydihydrocorydaline salts, protecting mitochondrial genome damage, and stimulating the transcriptional co-activator PGC-1α, which removes reactive oxygen species by enhancing detoxifying enzyme activity.

It enhances ATP synthesis, which is an important function of mitochondria.

Ref: Bakuchiol: a retinol-like functional compound revealed by gene expression profiling and clinically proven to have anti-aging effects.
Ref: Bakuchiol in the management of acne-affected Skin.



「BRIGHTENING」

① Bakuchiol inhibits the expression of proteins associated with melanin production (such as tyrosinase, TRP-1, TRP-2, MITF, and SOX9), thereby reducing melanin synthesis.

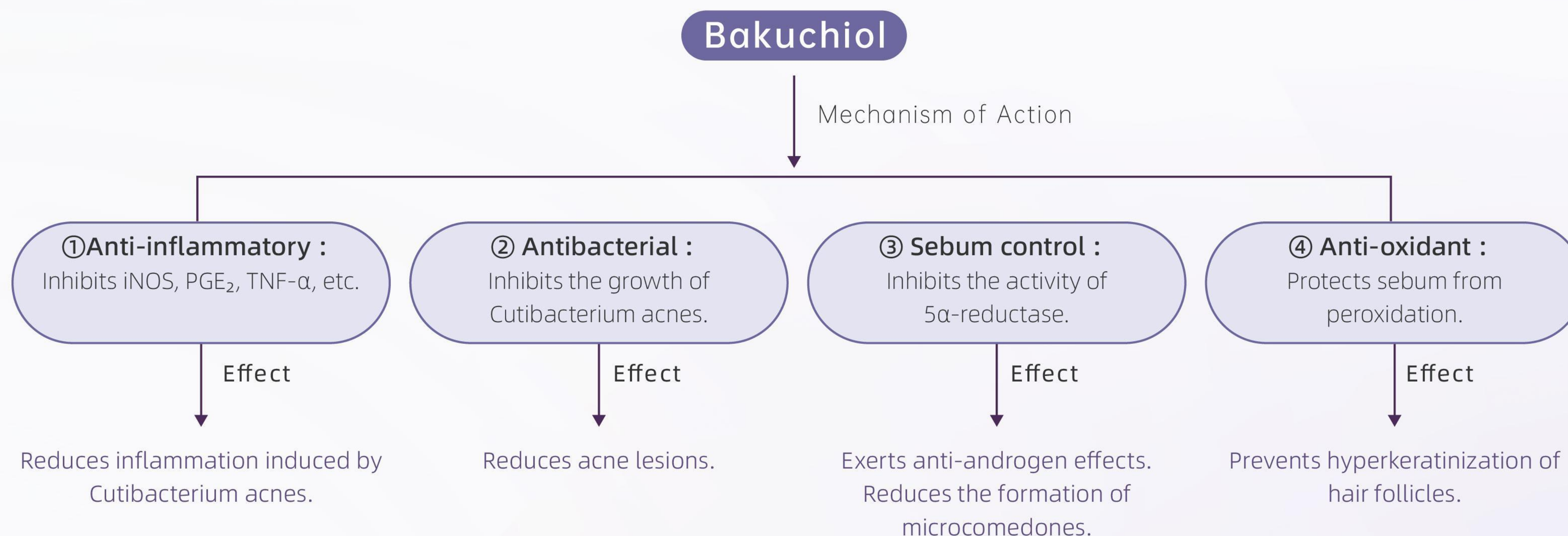
② It suppresses the formation of primary cilia in melanocytes.

③ It inhibits the formation of melanosome dendrites by downregulating the expression of Rac/Cdc42/ α -PAK signaling proteins.

④ It exhibits potential inhibitory effects on melanin formation in B16 mouse melanoma cells induced by α -melanocyte-stimulating hormone (α -MSH), with no cytotoxicity.

⑤ Within a low concentration range, bakuchiol exerts a stronger tyrosinase-inhibitory effect than arbutin, showing promising potential as a natural tyrosinase inhibitor.

ANTI-ACNE MECHANISM OF ACTION OF BAKUCHIOL ON ACNE



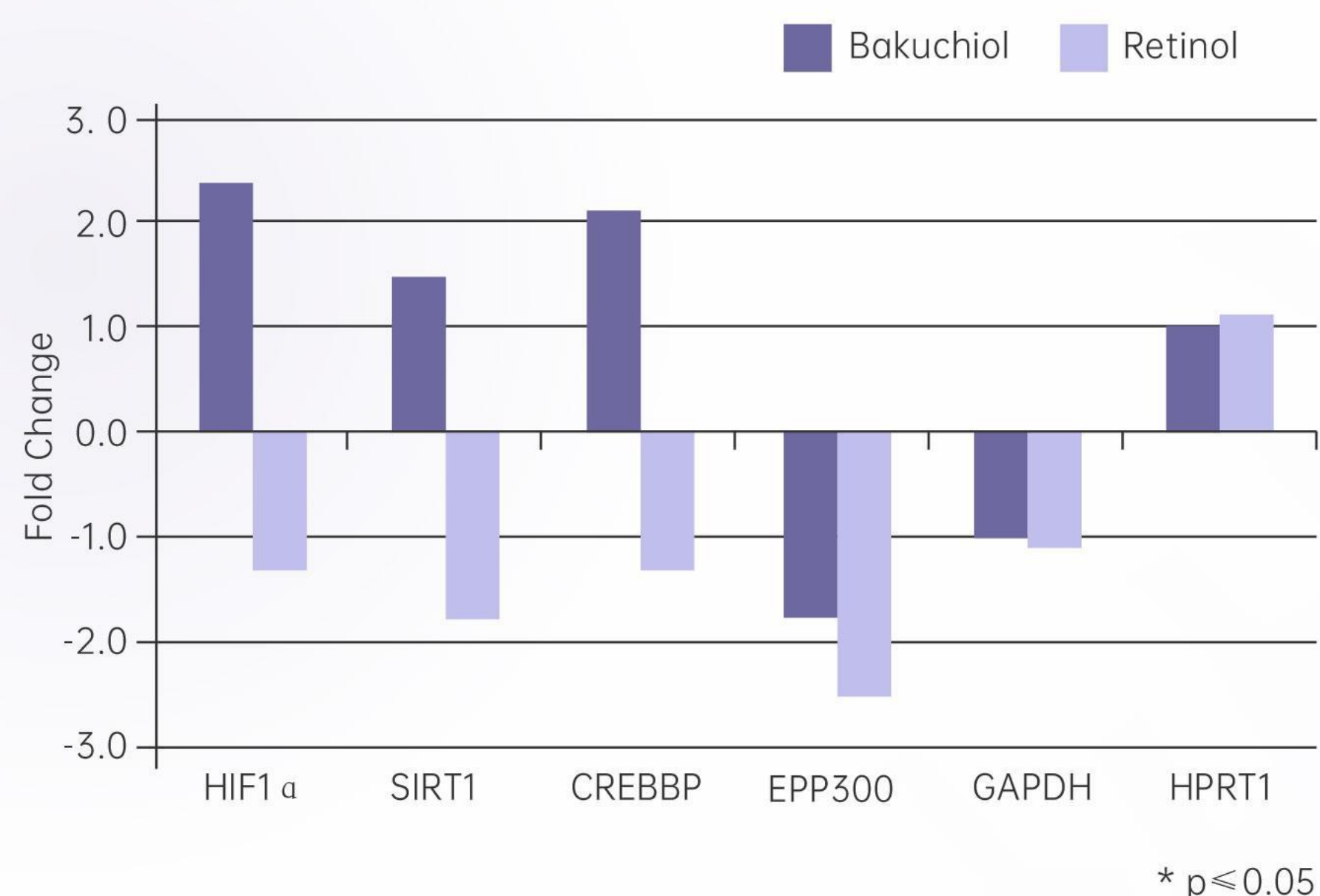
Part . 04

「EFFICACY EVALUATION」

「EFFICACY EVALUATION」

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01 ANTI-AGING: PROMOTES THE EXPRESSION OF SIRT-1 AND HIF-1α



Bakuchiol (10µg/ml) :

Significantly increased gene expression of HIF-1α (+2.4-fold change) and SIRT-1 (+1.5-fold change)

Retinol (10µg/ml) :

Showed the opposite trend, with decreased expression of HIF-1α (-1.3-fold change) and SIRT-1 (-1.8-fold change)

Results:

Compared to retinol, bakuchiol promotes the expression of SIRT-1 and HIF-1α in human keratinocytes. This suggests that bakuchiol can exert anti-aging effects through pathways not supported by retinol.

HIF-1α: Hypoxia inducible factor-1, which is the selling point of Guerlain's Orchidée Impériale.
 SIRT-1: It is known as a kind of longevity gene, which is Estée Lauder's selling point

02 ANTI-AGING: PROMOTES TYPE I COLLAGEN SYNTHESIS

Test Basis:

Zebrafish Type I collagen gene expression promotion assay

Method:

A total of 36 zebrafish (6 days old) were exposed to a 0.0005 g/L solution of Elmtrifun. A blank control group was set in parallel. After 24 hours of exposure, RNA was extracted from the zebrafish, followed by cDNA synthesis and real-time PCR amplification. β -actin was used as the housekeeping gene, and Ct values were used as amplification results. The relative expression levels of col1a1a, col1a1b, and col1a2 were calculated and statistically analyzed.

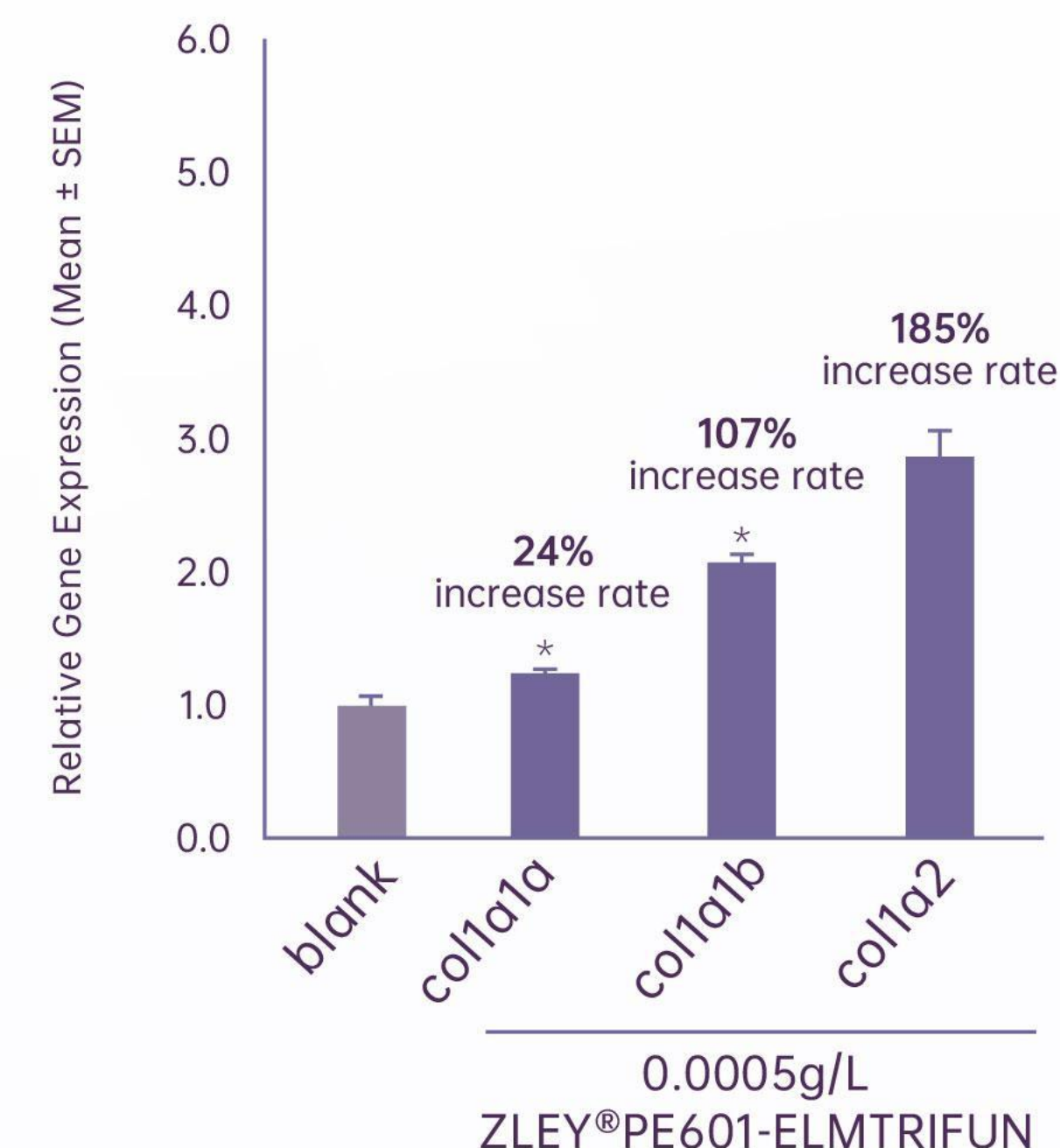
Results:

Compared with the blank control group, 0.0005 g/L Elmtrifun increased the expression of zebrafish collagen genes: col1a1a: +24% ($p = 0.0011$); col1a1b: +107% ($p = 0.00013$); col1a2: +185% ($p = 0.00092$)

Conclusion:

ZLEY®PE601-Elmtrifun demonstrates the ability to promote Type I collagen regeneration, contributing to anti-wrinkle effects.

Bar chart of relative expression levels of Type I collagen genes in zebrafish



02 ANTI-AGING: PROMOTES TYPE I COLLAGEN SYNTHESIS

Test Basis:

Zebrafish elastin gene (Elna) expression promotion assay

Method:

A total of 36 zebrafish (6 days old) were exposed to a 0.0005 g/L solution of ZLEY®PE601-Elmtrifun, with a blank control group set in parallel. After 24 hours of exposure, RNA was extracted from the zebrafish, followed by cDNA synthesis and real-time PCR amplification. β -actin was used as the housekeeping gene, and Ct values were used as amplification results. The relative expression level of Elna was calculated and statistically analyzed.

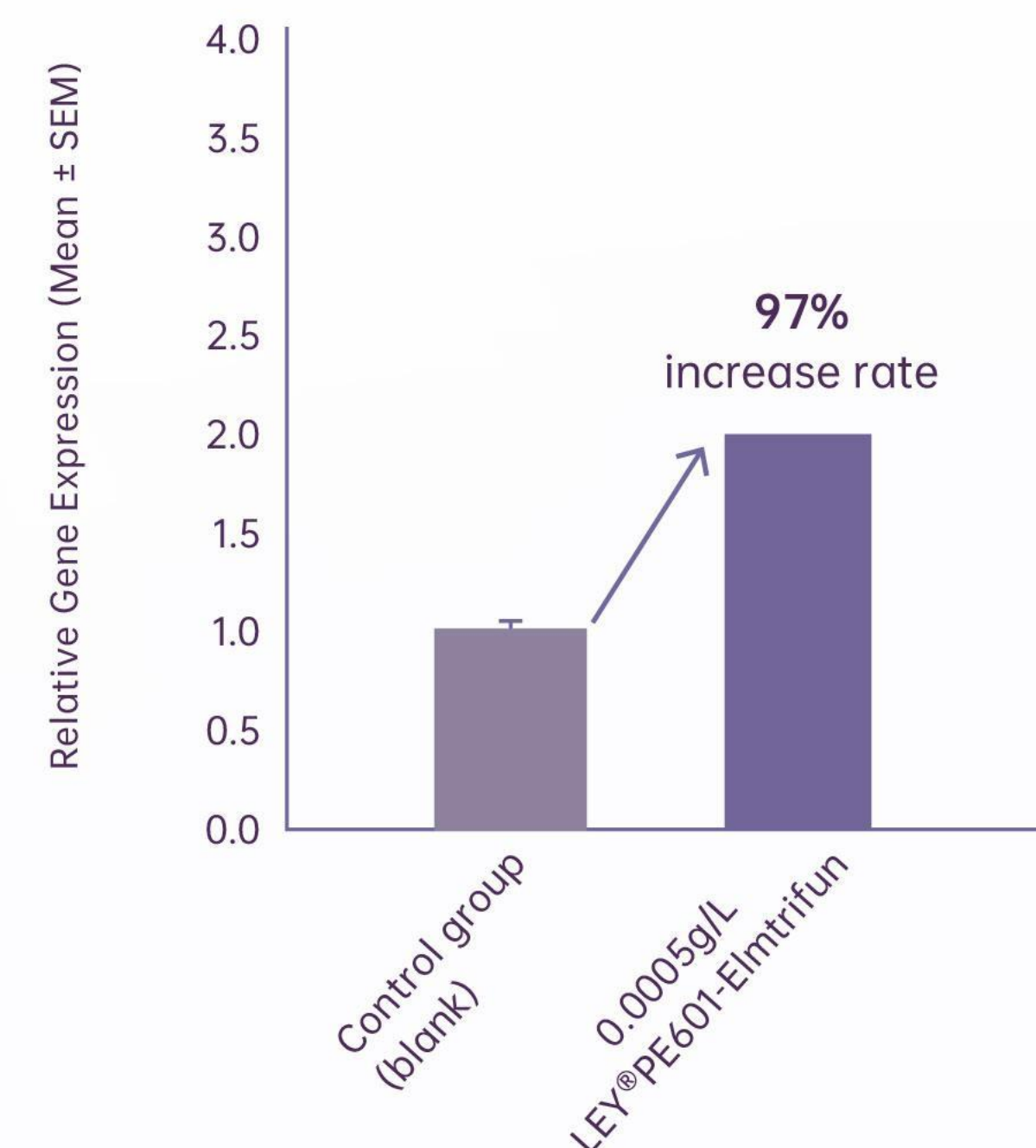
Results:

Compared with the blank control group, 0.0005 g/L ZLEY®PE601-Elmtrifun increased the expression of the zebrafish Elna gene by 97% ($p = 0.0000024$).

Conclusion:

ZLEY®PE601-Elmtrifun promotes elastin regeneration, contributing to anti-wrinkle effects.

Bar chart of relative expression levels of zebrafish elastin gene



「NOURISHING」

TYPE I COLLAGEN AND ELASTIN GENE EXPRESSION PROMOTION IN ZEBRAFISH

Type I collagen ↑185% and Elastin ↑97%

Sample name		PE601-Elmtrifun				
Sample code		VI-20231671S-8				
Test concentration		Promotion rate of collala expression of the zebrafish-type collagengene	Promotion rate of collalb expression of the zebrafish-type collagen gene	Promotion rate of collala expression of the zebrafish-type collagengene	Evaluation of nourishing efficacy	
0.005g/L		19% (p=0.013)	94% (p=0.0051)	92% (p=0.011)	Notable	
0.0015g/L		27% (p=0.0020)	72% (p=0.00035)	118% (p=0.0051)	Notable	
0.0005g/L		24% (p=0.0011)	107% (p=0.00013)	185% (p=0.00092)	Notable	

Sample name		PE601-Elmtrifun			
Sample number		VI-20231671S-8			
Test		Concertration	Result		Evaluation of nourishing efficacy
Promotion rate of elastin gene Elna expression in zebrafish		0.005g/L	63% (p=0.0014)		Notable
		0.0015g/L	45% (p=0.0039)		Notable
		0.0005g/L	97% (p=0.0000024)		Notable

03 SKIN ELASTICITY & FIRMNESS REPORT

By using a sample containing 2% ZLEY®PE601-Elmtrifun
 After 28 days, the skin elasticity R2 value increased significantly by 9.36%.
 (R2 is the skin elasticity index: the higher the value, the better the skin elasticity.)

*Note: 1g/L=0.1%



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Average values before and after product use

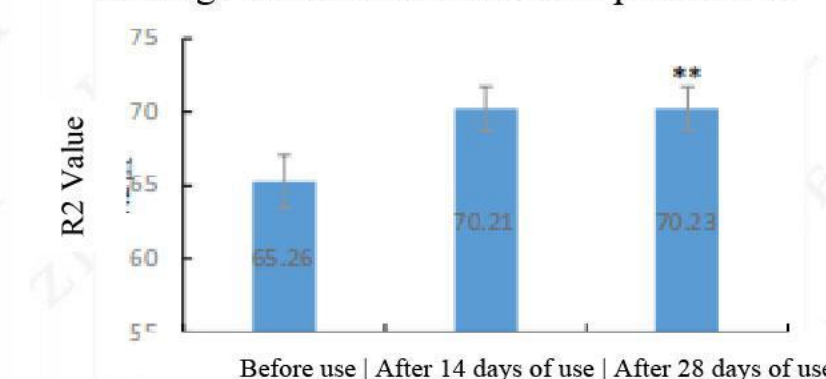


Figure 7. Trend of changes in skin elasticity R2

(Significance notation: $p > 0.05$ indicates no significant difference; $0.01 < p < 0.05$ indicates a significant difference, marked with "**"; $p < 0.01$ indicates a highly significant difference, marked with "***)

Increment after product use

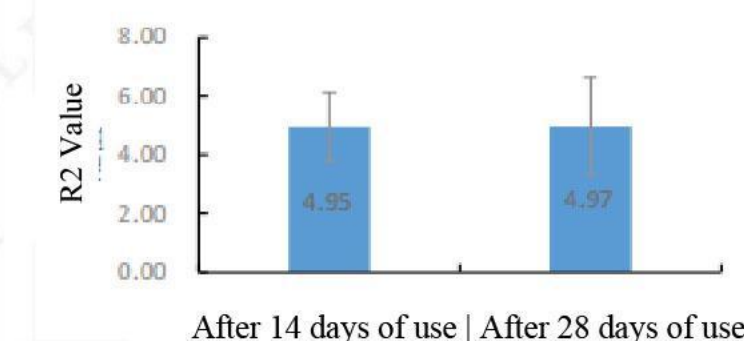


Figure 8. Increment in skin elasticity R2

Change rate (%) after product use

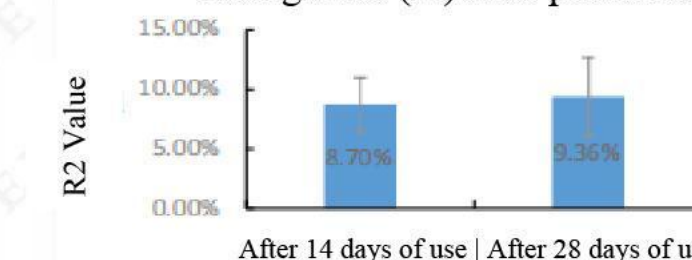


Figure 9. Change rate of skin elasticity R2

03 SKIN ELASTICITY & FIRMNESS REPORT

By using a sample containing 2% ZLEY®PE601-Elmtrifun
 After 28 days, the F4 value decreased significantly by 30.92%.
 (F4 is the skin firmness index: the lower the value, the better the skin firmness.)

*Note: 1g/L=0.1%



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Average values before and after product use

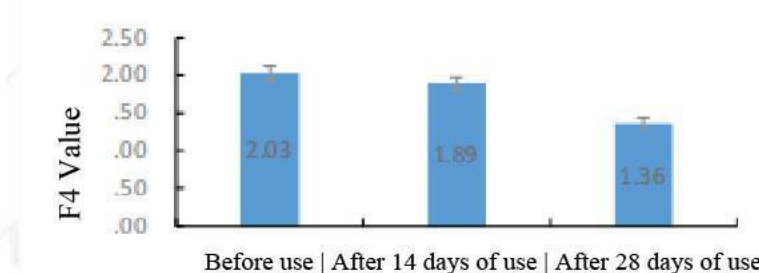


Figure 1. Trend of changes in skin elasticity F4

(Significance notation: $p > 0.05$ indicates no significant difference; $0.01 < p < 0.05$ indicates a significant difference, marked with "**"; $p < 0.01$ indicates a highly significant difference, marked with "***)

Increment after product use

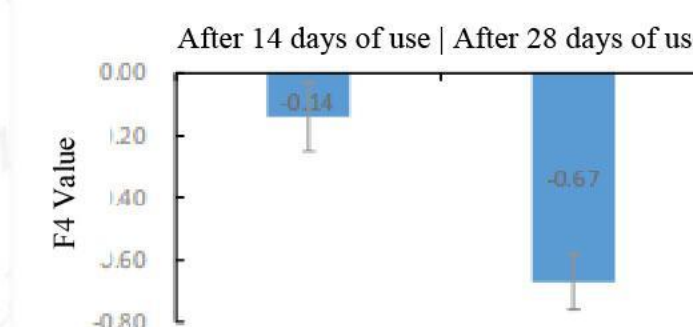


Figure 2. Increment in skin elasticity F4

Change rate (%) after product use

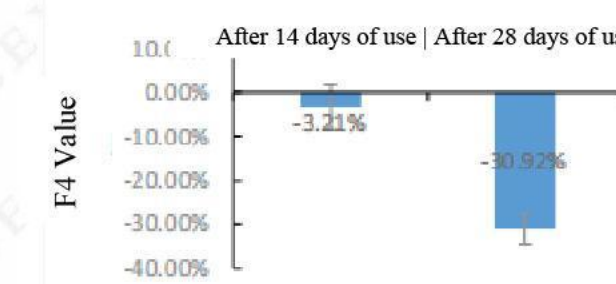


Figure 3. Change rate of skin elasticity F4

04 ANTI-PHOTOAGING: PREVENTING UV-INDUCED SKIN DAMAGE

- Ultraviolet (UV) radiation primarily induces apoptosis in keratinocytes (HaCaT cells).
- The p53 protein and cysteine-aspartic acid protease-3 (caspase-3) are pro-apoptotic genes that play important roles in processes such as DNA damage.
- Once activated, caspase-3 can trigger intracellular protein degradation, ultimately leading to cell death.
- p53 participates in regulating the mitochondrial apoptotic pathway by altering the mitochondrial membrane potential, which ultimately activates caspase-3 and initiates the apoptotic cascade.

The test results of mRNA expression on caspase-3 in each group

Group	Radiation time (min)	Concentration (mol/L)	2-△△Ct值 CasPase-3
Blank Group	—	—	1.000±0
Model Group	10	—	2.592±0.056##
Estradiol group	10	10 ⁻⁷	1.621±0.062**
Bakuchiol	10	10 ⁻⁶	1.805±0.041**

Remarks: Compared with the blank group,##P<0.01;Compared with the model group,**P<0.01

Results of protein expression on p53, caspase-3 in each group

Group	Radiation time (min)	Concentration (mol/L)	p53/β-actin	caspase3/β-actin
Blank Group	—	—	0.229±0.020	0.378±0.047
Model Group	10	—	0.522±0.040##	0.527±0.026##
Estradiol group	10	10 ⁻⁷	0.328±0.024**	0.412±0.053**
Bakuchiol	10	10 ⁻⁶	0.370±0.032**	0.436±0.03*

Remarks: Compared with the blank group,##P<0.01;Compared with the model group,**P<0.01

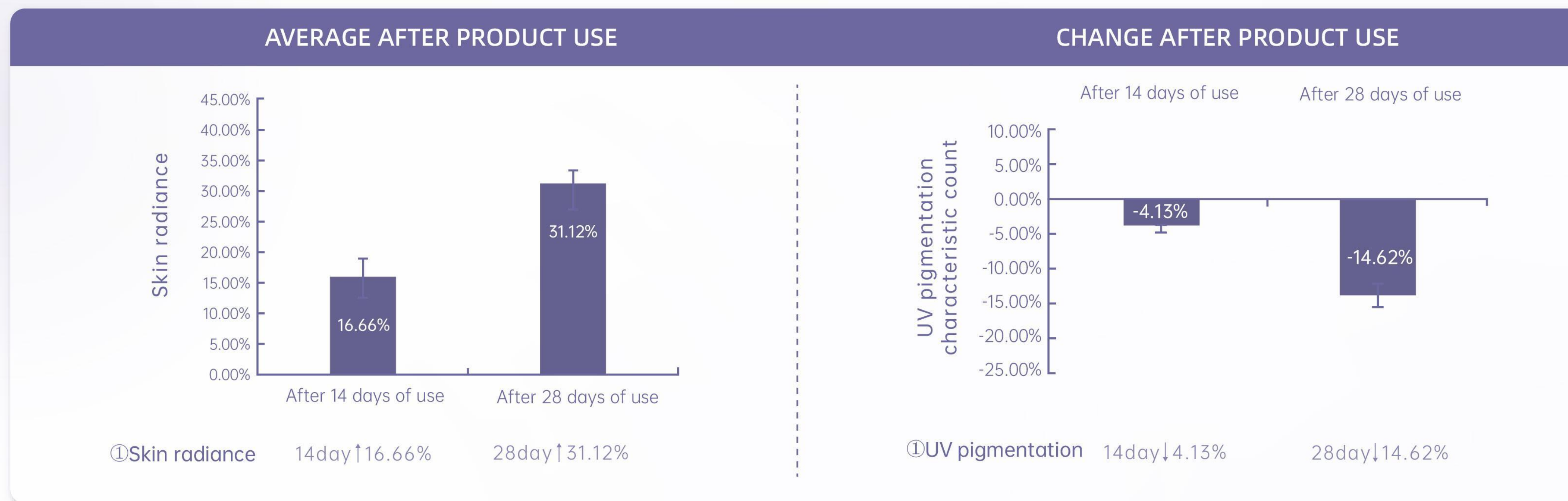
Results:

Compared with the model group, treatment with 10⁻⁶ mol/L bakuchiol significantly reduced the expression levels of apoptosis-related genes p53 and caspase-3 in HaCaT cells. This indicates that bakuchiol, when applied in cosmetic formulations, can help prevent UV-induced skin damage.

*Ref: Sun Qi, Piao Chengyu, Chen Dandan, etc. Effect of Bakuchiol on the expression of p53 and caspase-3 in HaCaT cells apoptosis induced by UVB [J]. Chinese Journal of Aesthetic Medicine,2017,26(7):37-40.

04 ANTI-PHOTOAGING: ANTI-PHOTOAGING DATA OF 2% ZLEY®PE601-ELMTRIFUN LOTION

28 subjects, significant effects after 28 days of use



05 SOOTHING & ANTI-INFLAMMATORY: INHIBITION OF TNF- α EXPRESSION

1) Test Basis:

Cosmetic soothing efficacy test - in vitro determination of TNF- α inflammatory factor content LPS-induced macrophage RAW264.7 assay method

2) Test Sample:

ZLEY®PE601-Elmtrifun

3) Test Results:

► Positive control group:

100 ppm dipotassium glycyrrhizate showed a TNF- α inhibition rate of $27.96 \pm 0.57\%$ in RAW264.7 cells.

► Sample groups:

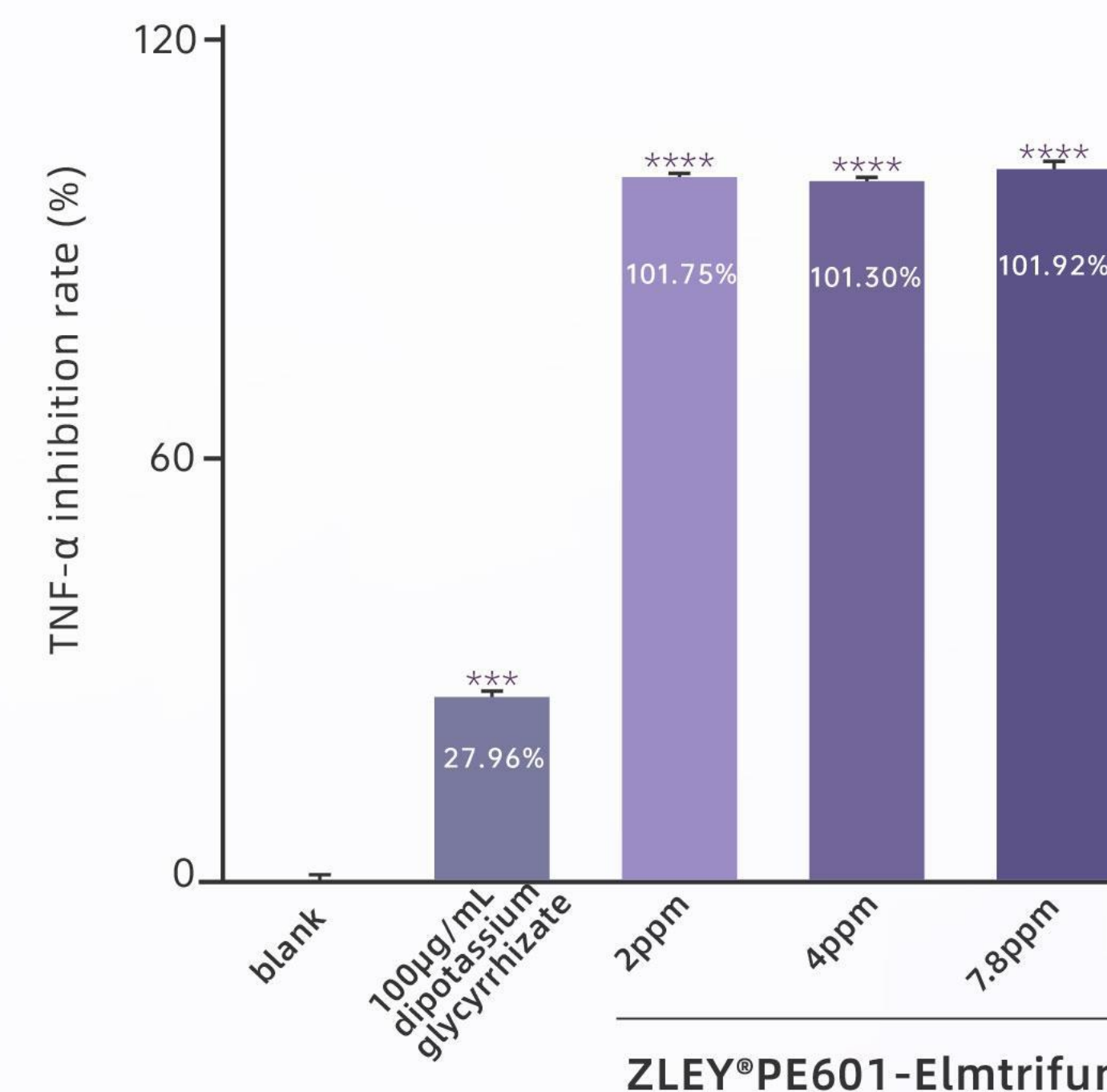
ZLEY®PE601-Elmtrifun at 2 ppm, 4 ppm, and 7.8 ppm showed TNF- α inhibition rates of $101.75 \pm 0.08\%$, $101.30 \pm 0.06\%$, and $101.92 \pm 0.16\%$, respectively, in RAW264.7 cells.

All data showed statistically significant differences ($P < 0.0001$).

4) Conclusion:

ZLEY®PE601-Elmtrifun exhibits significant soothing and anti-inflammatory effects.

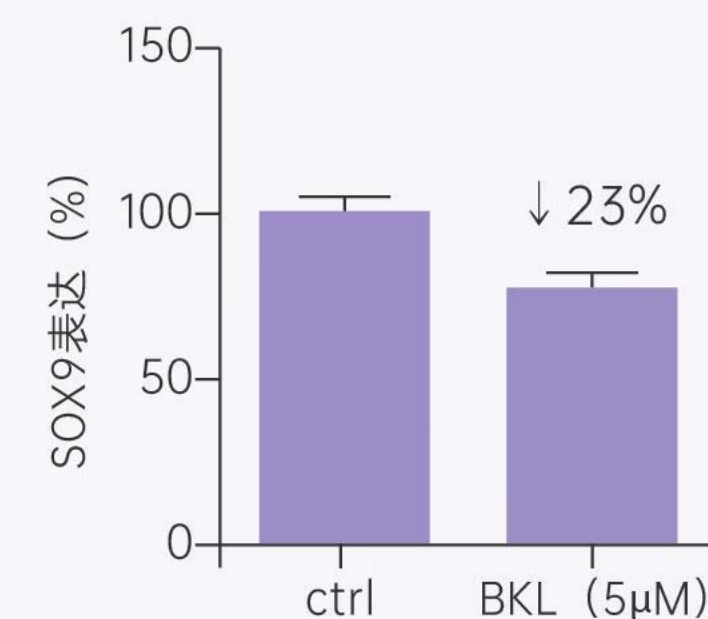
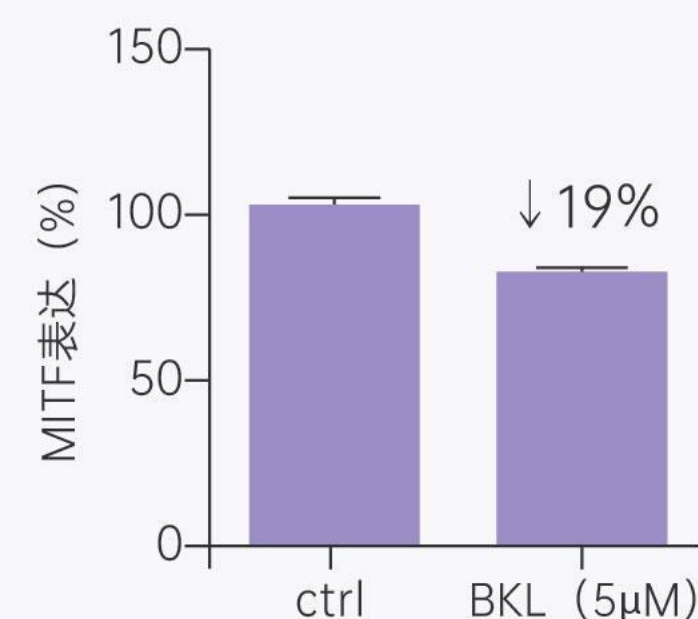
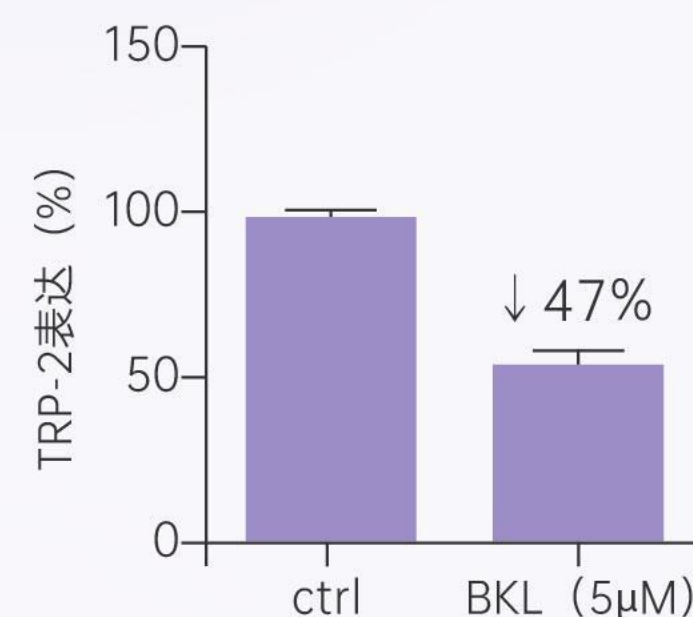
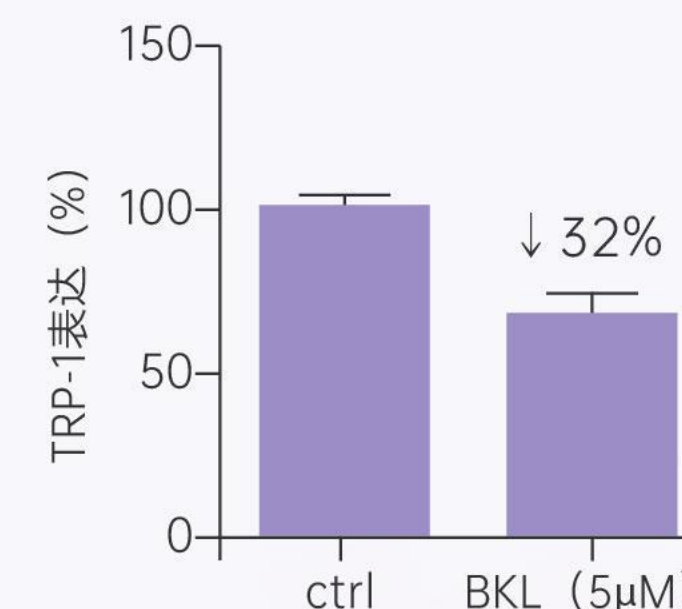
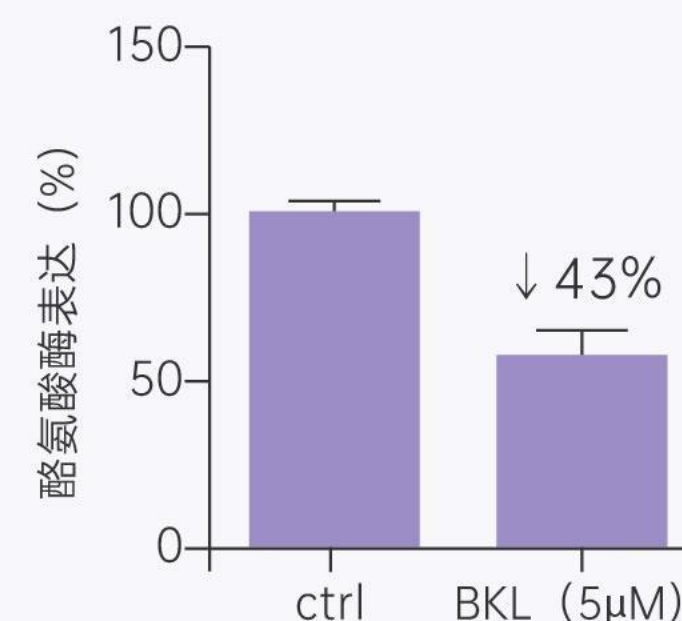
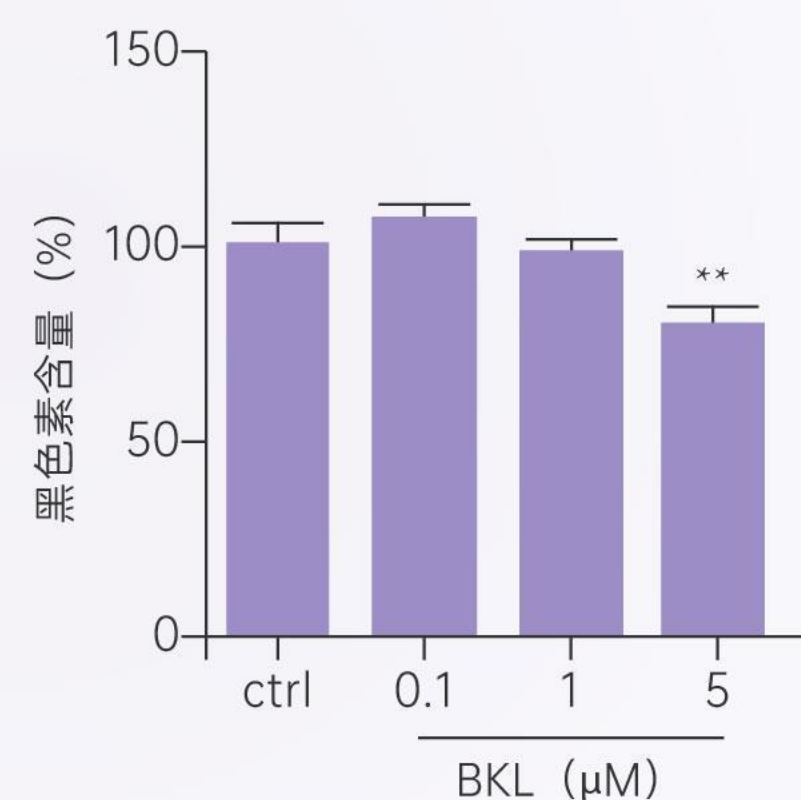
Figure: Inhibition rate of TNF- α in RAW264.7 cells by ZLEY®PE601-Elmtrifun



06 SKIN BRIGHTENING: INHIBITION OF PROTEINS RELATED TO MELANIN PRODUCTION

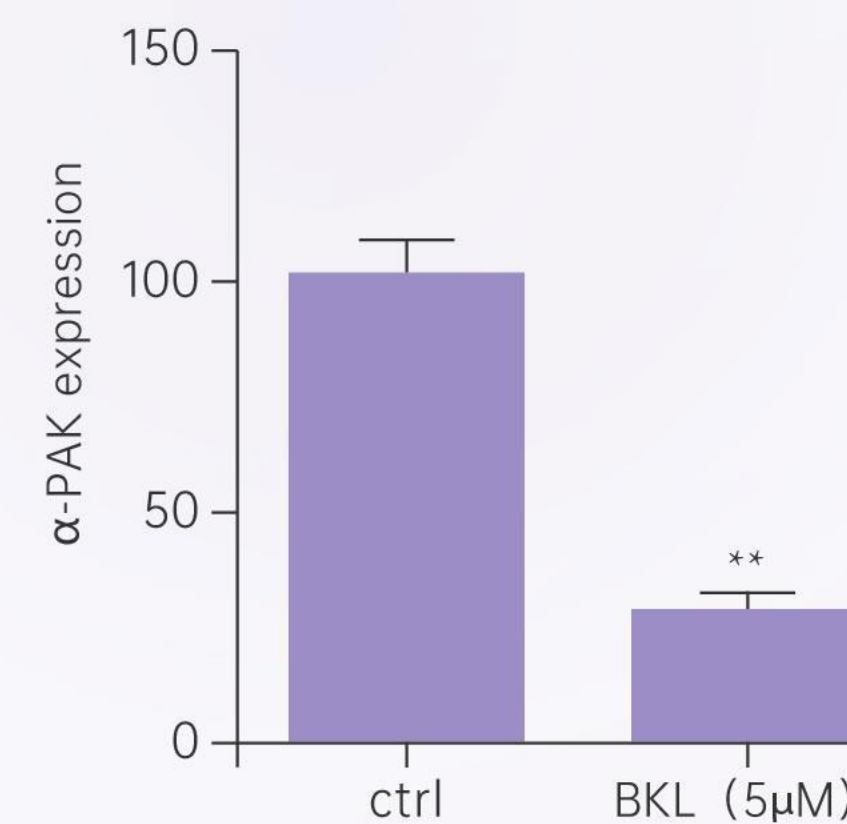
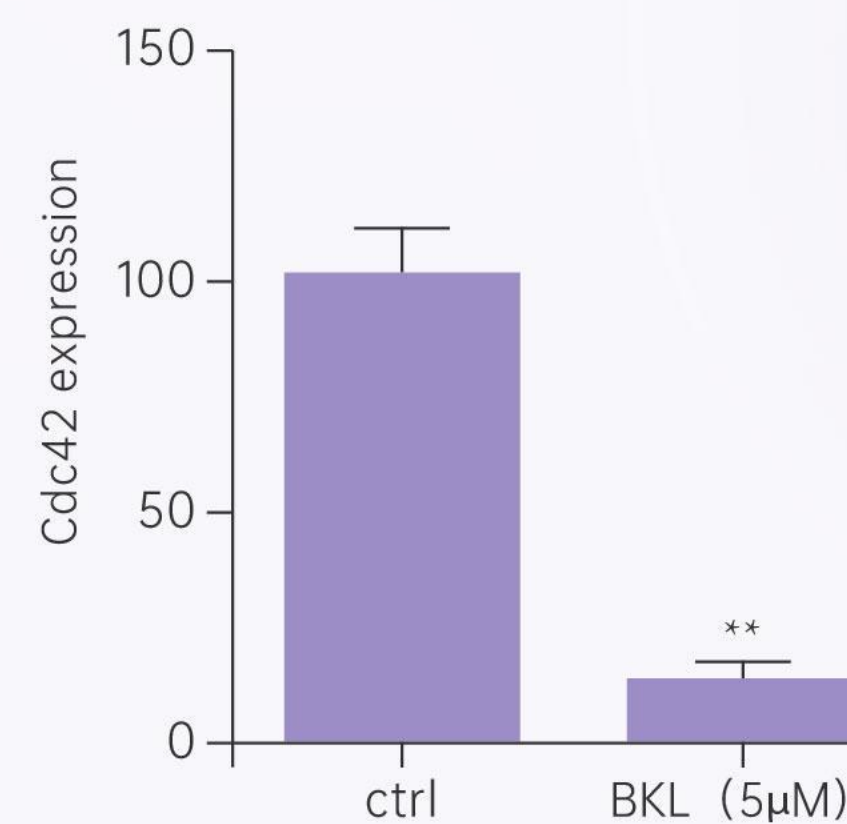
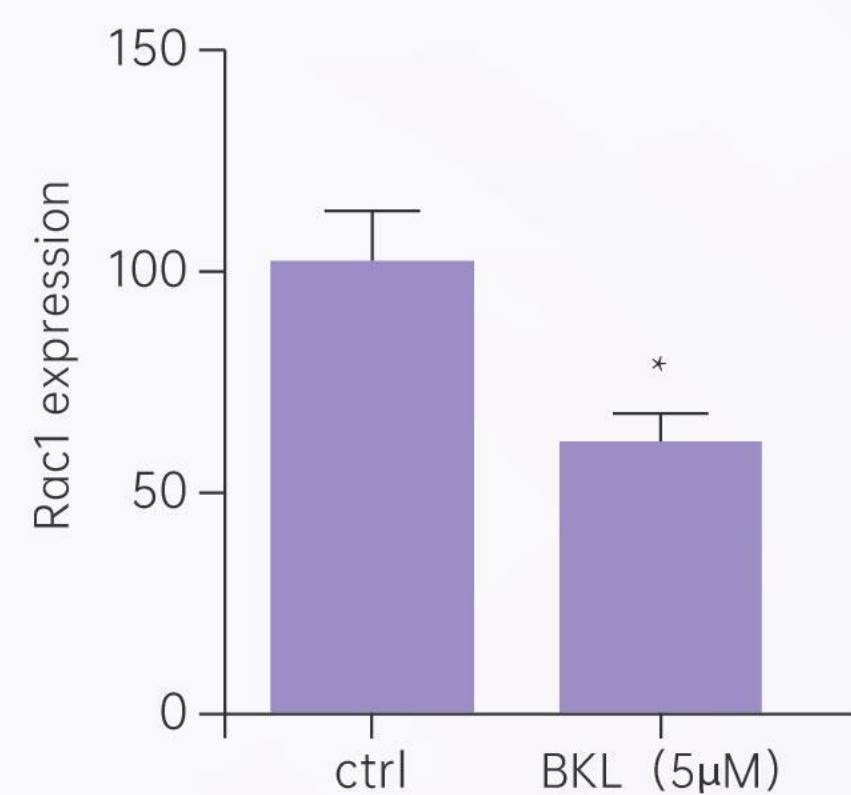
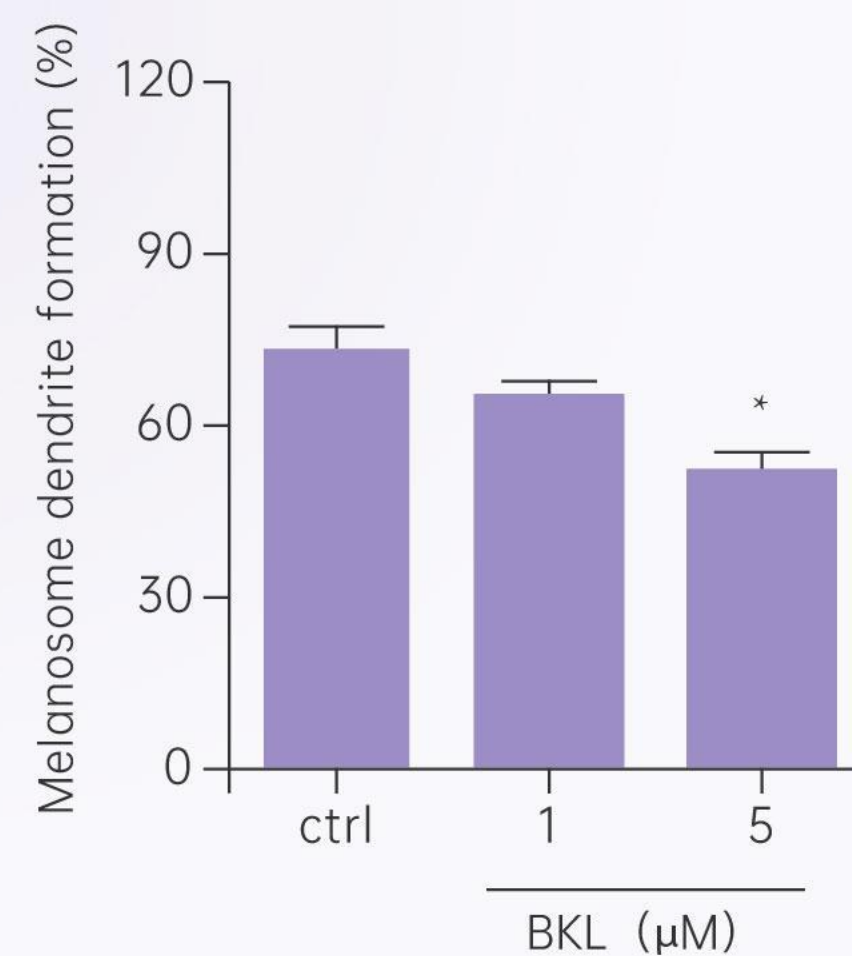
Bakuchiol (BKL) inhibits the expression of proteins associated with melanin production

- Tyrosinase (↓ 43%)
- TRP-1 (↓ 32%)
- TRP-2 (↓ 47%)
- MITF (↓ 19%)
- SOX9 (↓ 23%)



06 SKIN BRIGHTENING: INHIBITS MELANOSOME DENDRITE FORMATION

02 Bakuchiol (BKL) inhibits melanosome dendrite formation: reduces the expression of Rac/Cdc42/ α -PAK signaling proteins



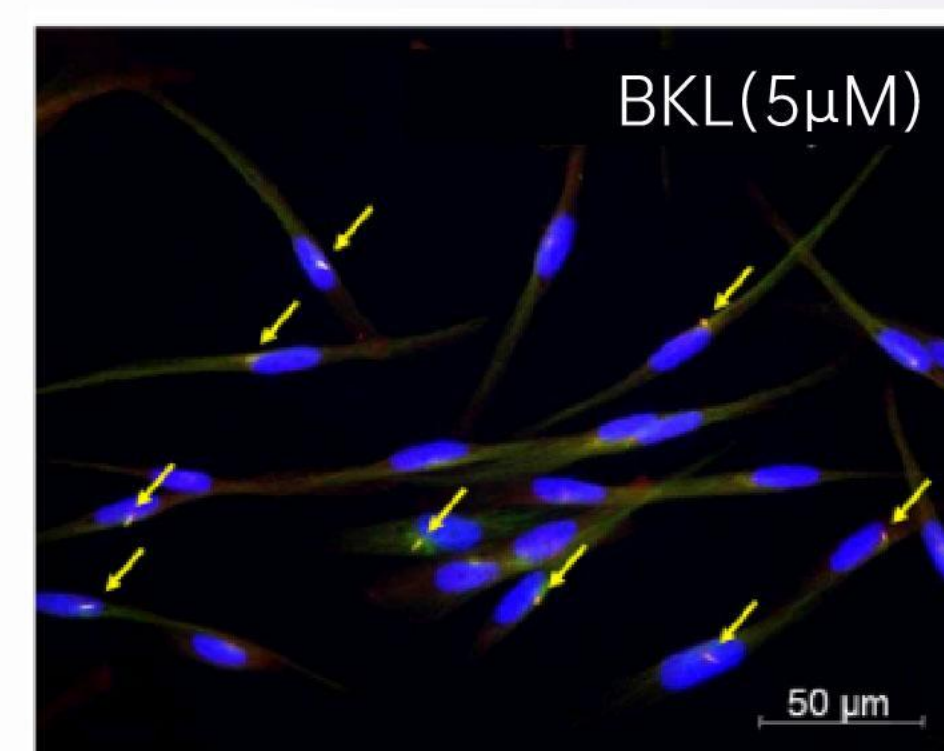
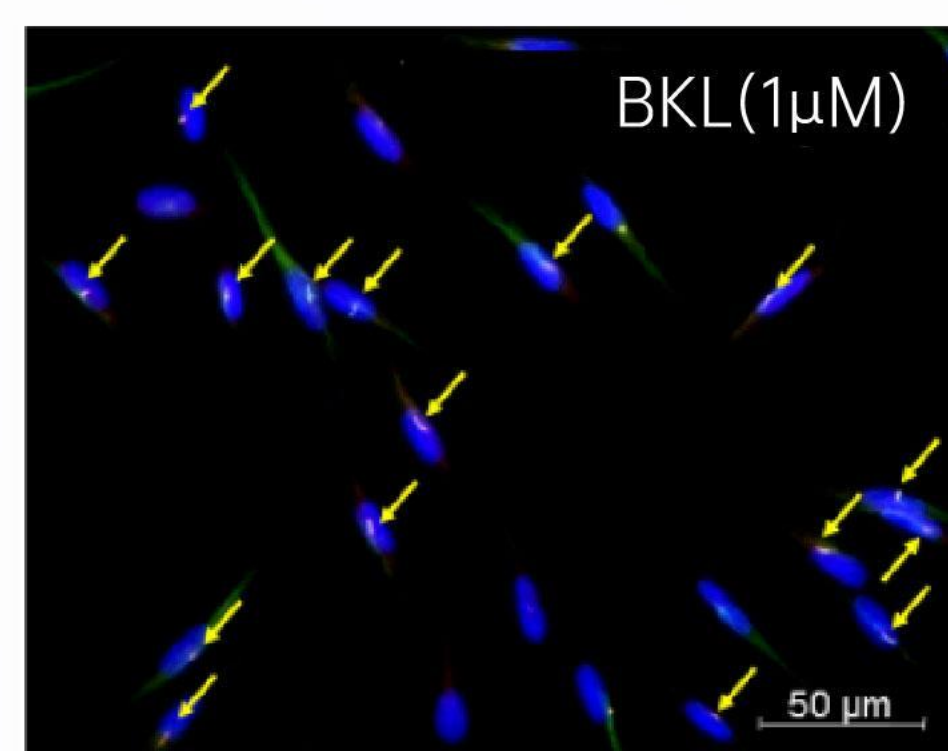
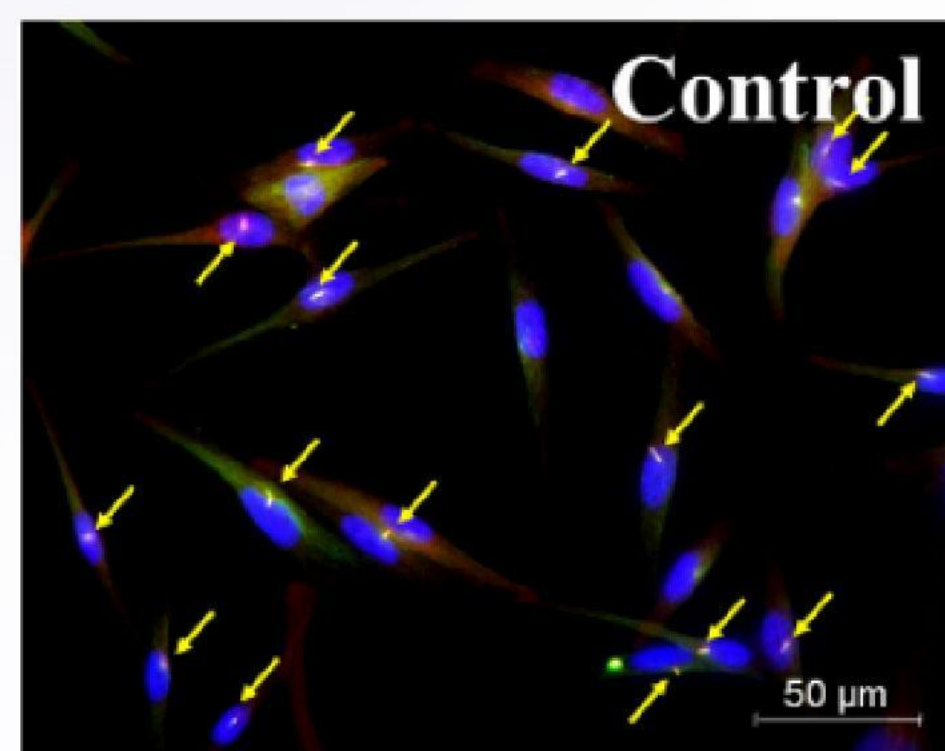
06 WHITENING: INHIBITION OF PRIMARY CILIUM FORMATION IN MELANOCYTES

03 Bakuchiol (BKL) inhibits primary cilium formation in melanocytes, thereby reducing melanin production .

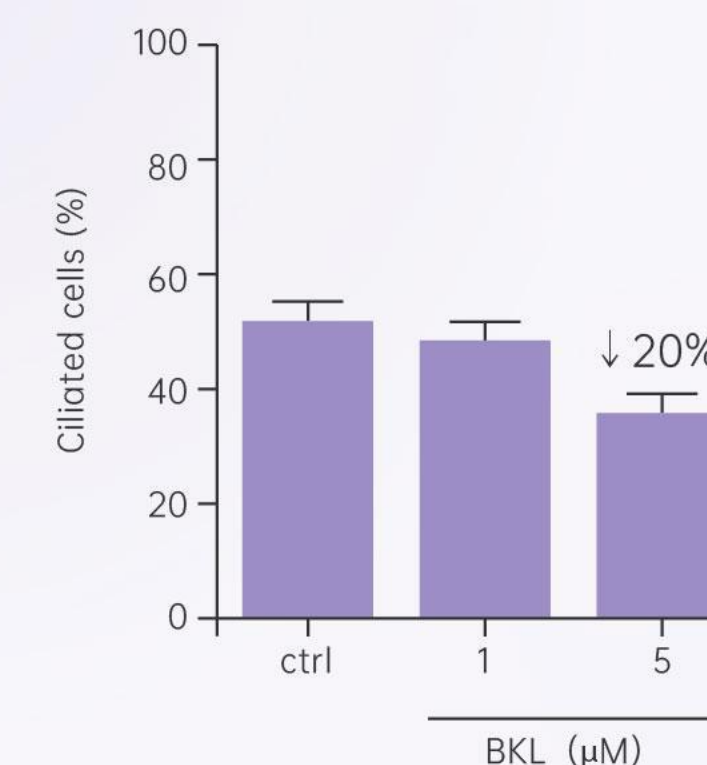
Positive control: NHEM cells (normal human epidermal melanocytes) cultured with 1 μ M and 5 μ M bakuchiol for 72h.

Recording: Primary cilia were observed in each cell using three fluorescent markers.

Annotation: Yellow arrows indicate primary cilia in each set of fluorescent images.



Fluorescent images of primary cilia



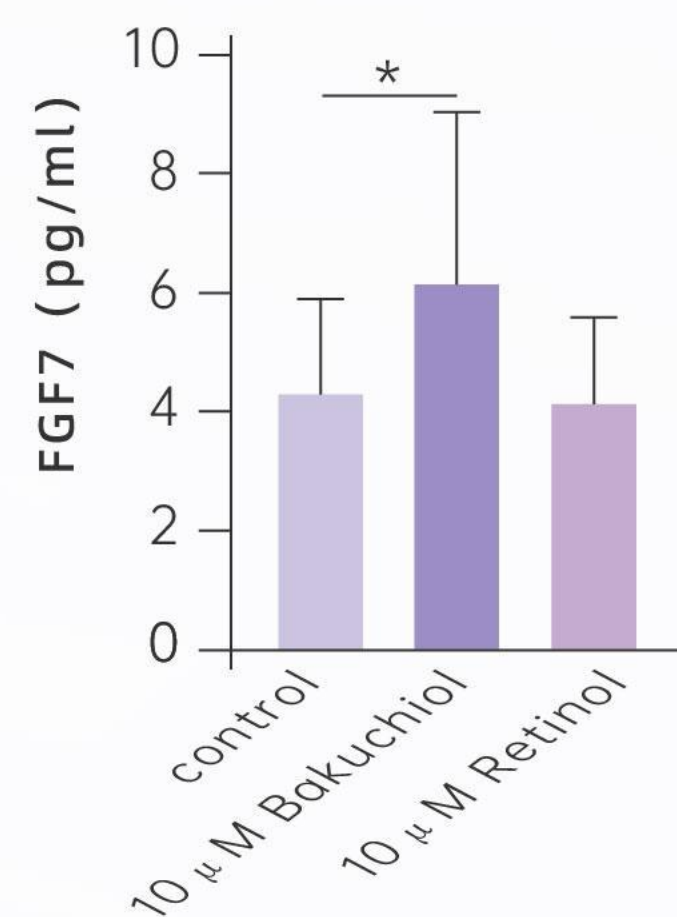
07 REPAIR: ENHANCEMENT OF SKIN REGENERATION CAPACITY

Bakuchiol demonstrates superior skin repair and regeneration efficacy compared to retinol .

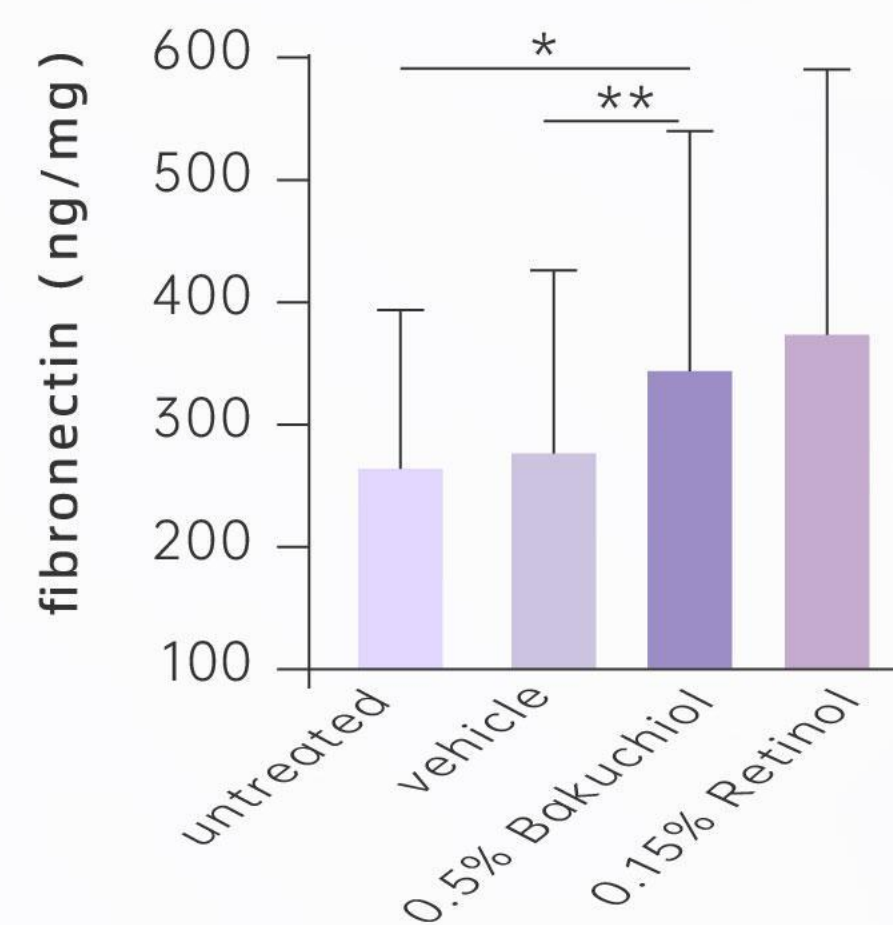
Figure 1: Bakuchiol significantly upregulates fibroblast growth factor 7 (FGF7) expression, while retinol shows no effect.

Figure 2: Enhanced fibronectin expression by bakuchiol.

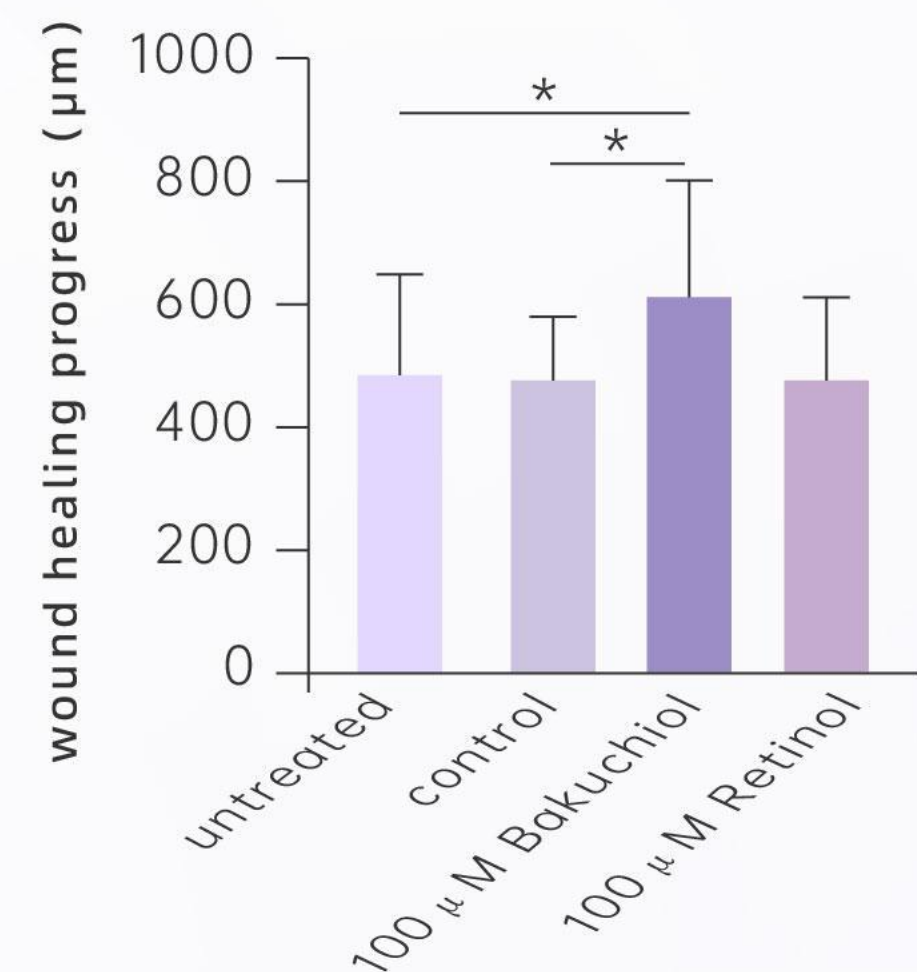
Figures 3-4: In wound healing models, bakuchiol markedly increases regenerated epidermal length (measured in μm), with retinol exhibiting no significant impact.



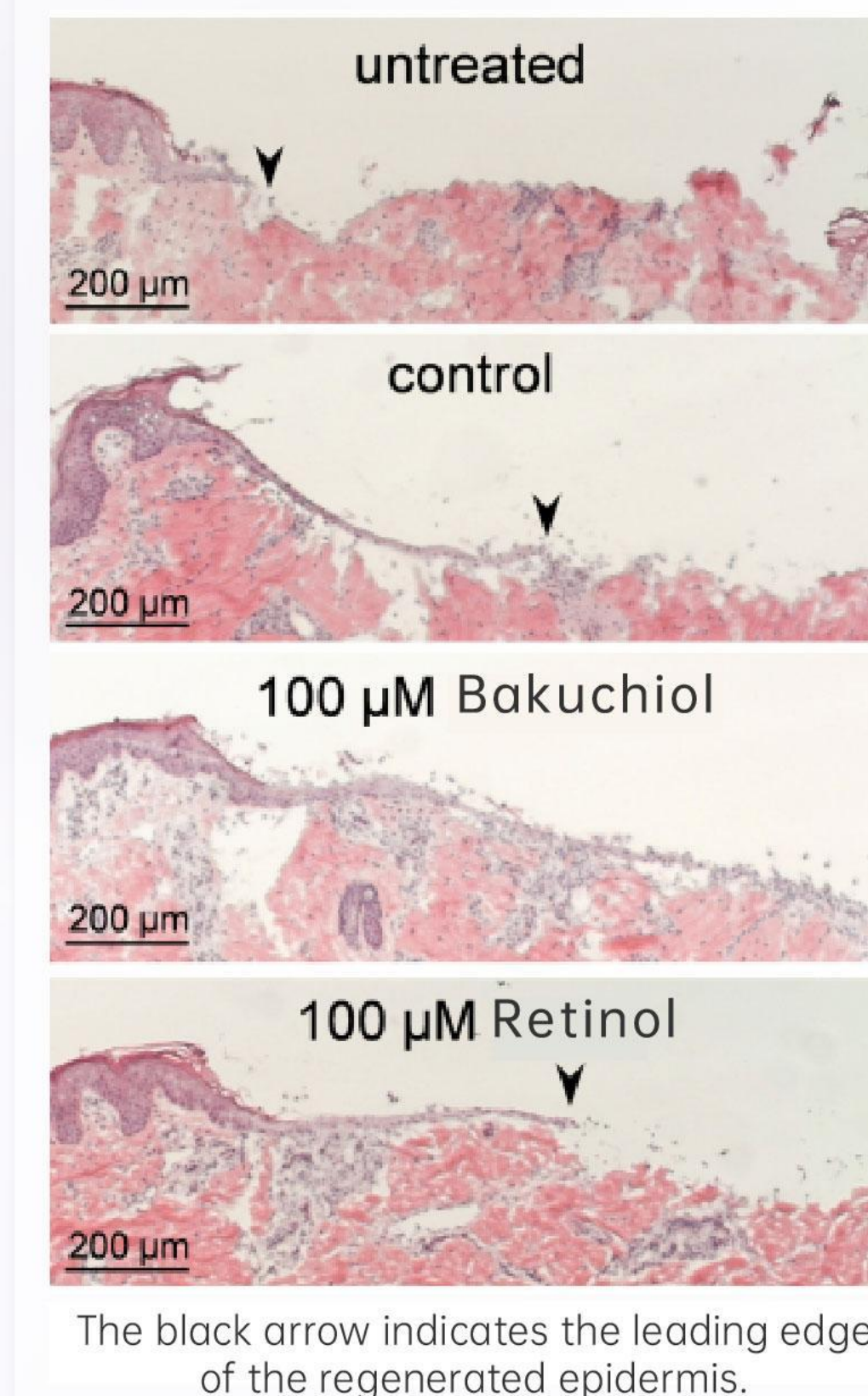
(Figure1)



(Figure2)



(Figure3)



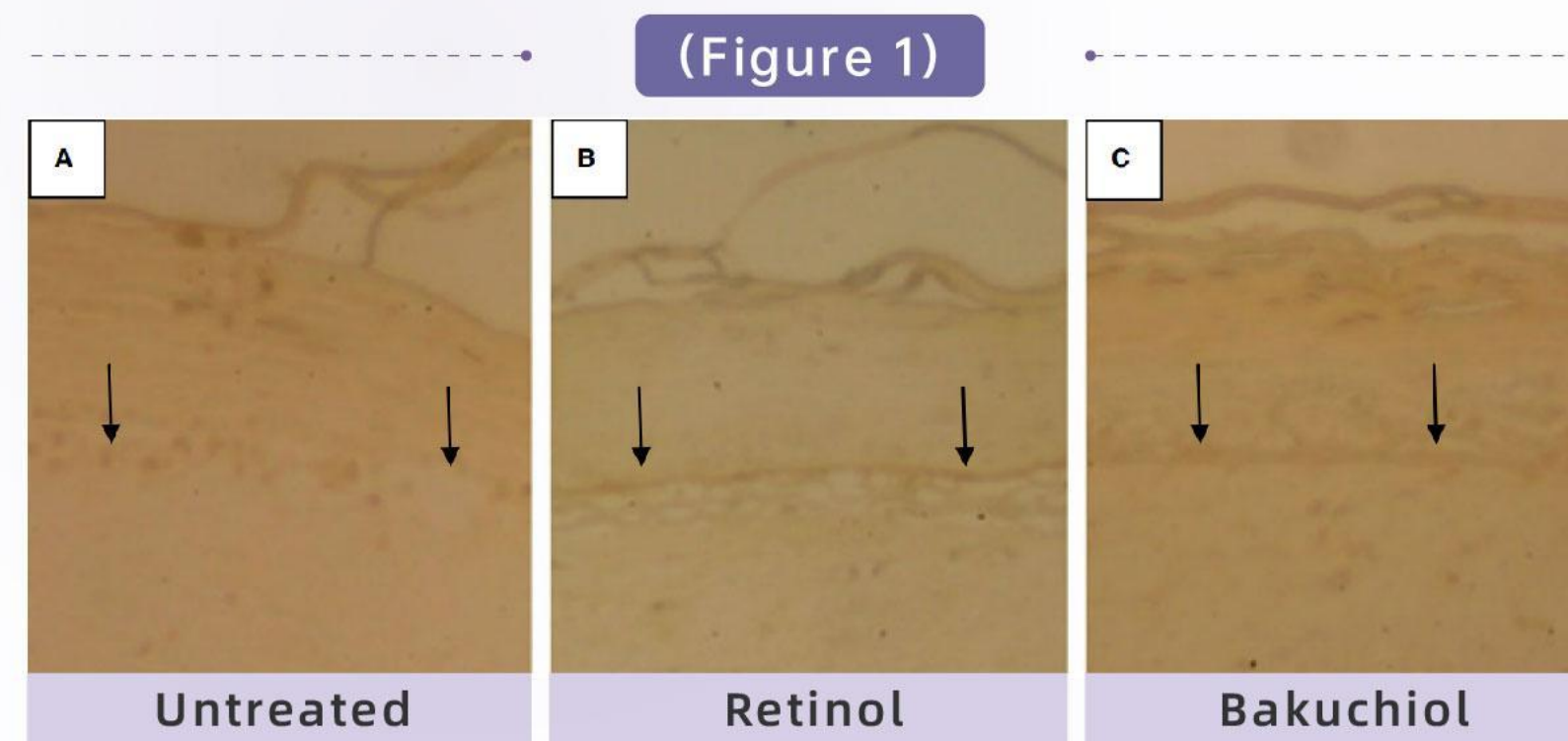
(Figure4)

07 REPAIR: RESTORATION OF EPIDERMAL BARRIER AND BASEMENT MEMBRANE

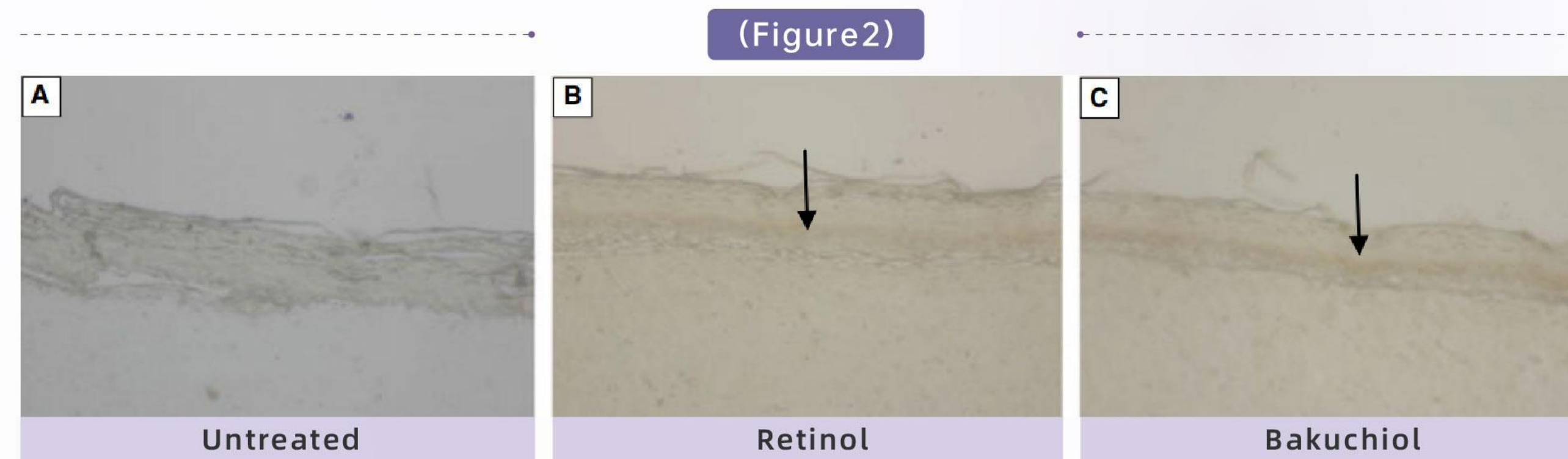
In vitro studies using EpiDermFT (full-thickness skin model) demonstrated that bakuchiol matches retinol in:

Basement membrane repair (Figure 1): Promotes type IV collagen expression.

Epidermal barrier restoration (Figure 2): Upregulates aquaporin-3 (AQP-3) expression in the basal layer.



Arrow annotations indicate the dermal-epidermal junction (basement membrane), where type IV collagen is localized. Compared to (A), darker bands in (B) and (C) indicate higher type IV collagen expression.



Arrow annotations highlight AQP-3 staining (primarily localized in the basal layer). Compared to (A), increased staining in (B) and (C) confirms both retinol and bakuchiol enhance AQP-3 expression.

07 REPAIR - EPIDERMAL BARRIER RESTORATION AND SOOTHING REPORT

The study used samples containing 2% ZLEY®PE601-Elmtrifun.

A total of 28 subjects participated, and significant effects were observed after 28 days.



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Table 2: Statistical Analysis Results of Transepidermal Water Loss (TEWL)

Statistical Item	Normality Test			Difference Test			
	p	Judgment Basis	Result	Test Method	p	Judgment Basis	Result
Before use VS. After 14 days of product use	0.003	<0.05	Does not conform to normality	Rank Sum Test	<0.001	<0.05	Shows significant difference
Before use VS. After 28 days of product use	0.029	<0.05	Does not conform to normality	Rank Sum Test	<0.001	<0.05	Shows significant difference

Used Shapiro-Wilk Test method to test the significance of improvement value's normal distribution

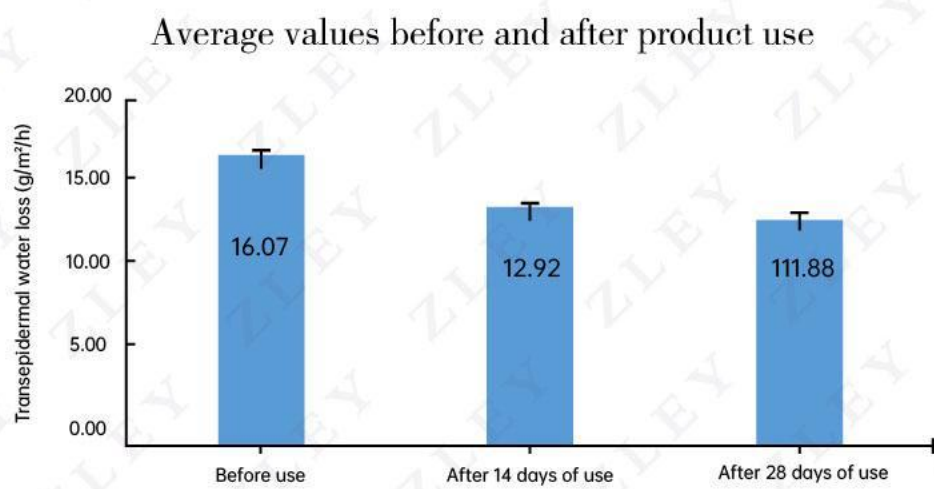


Figure 1 TEWL change trend

07 REPAIR - EPIDERMAL BARRIER RESTORATION AND SOOTHING REPORT

The study used samples containing 2% ZLEY®PE601-Elmtrifun.

After 28 days, the transepidermal water loss from the face of the subjects was significantly reduced by 24.72%. It has the effect of strengthening the skin barrier and has soothing and repairing properties.



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(Significance notation: $p > 0.05$ indicates no significant difference; $0.01 < p < 0.05$ indicates a significant difference, marked with “*” ; $p < 0.01$ indicates a highly significant difference, marked with “**”)

Increment after product use

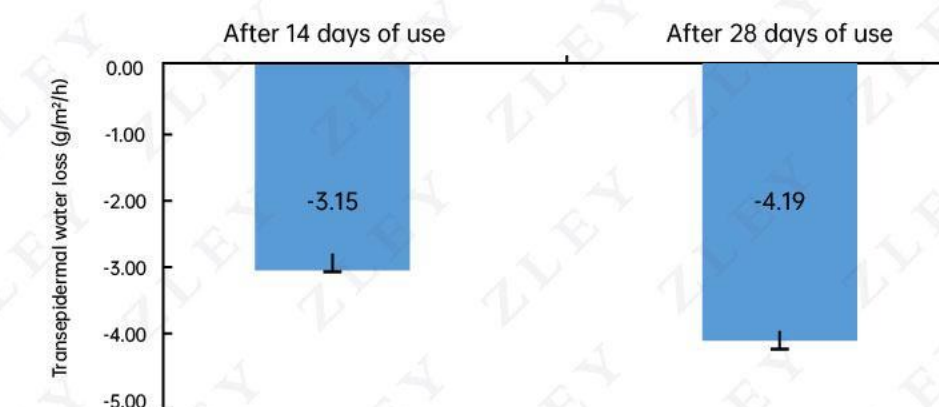


Figure 2. Increase in transdermal water loss

Change rate after product use /%

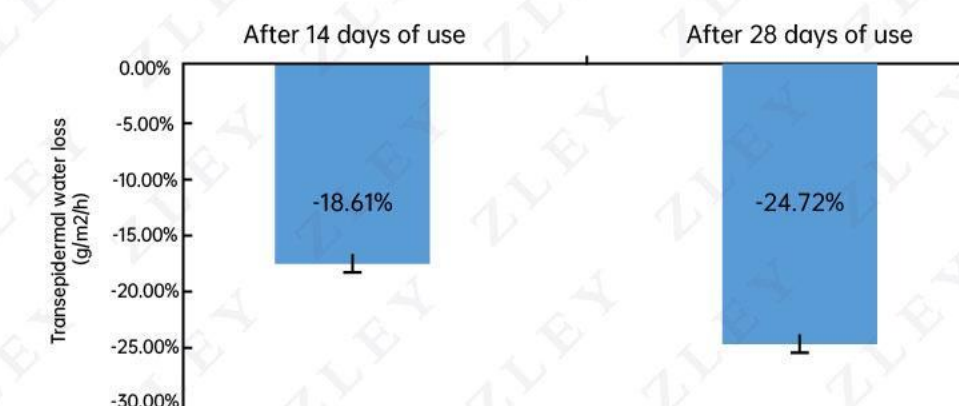


Figure 3. Rate of change in transdermal water loss

Result:

After 14days, the transepidermal water loss from the face of the subjects was significantly reduced by 18.61%. ($p < 0.001$)

After 28 days, the transepidermal water loss from the face of the subjects was significantly reduced by 24.72%. ($p < 0.001$)

The above demonstrates that continuous use of the test product for 28 days can significantly reduce transdermal moisture loss. It has the effect of strengthening the skin barrier and has soothing and repairing properties.

08 ANTI-ACNE

Acne treatment:

Bakuchiol inhibits the activity of 5α-reductase and Cutibacterium acnes.

Volunteer 1

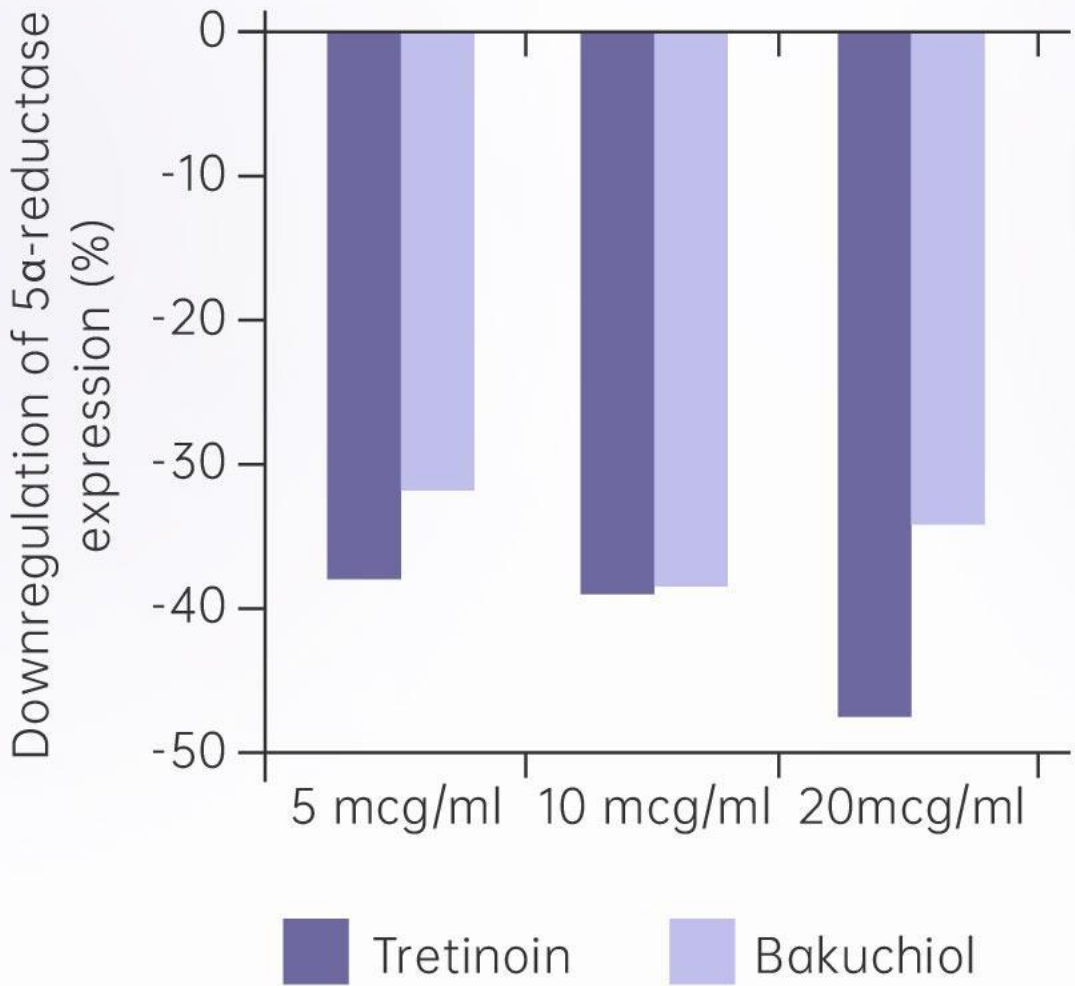


Volunteer 2



(Figure 1)

Results after 6 weeks of topical application of 1% bakuchiol on the face



(Figure 2)

Bakuchiol inhibits the expression of 5α-reductase

product	dosage(μg/ml)	抑菌环(mm)
Bakuchiol	0.6 (IC ₅₀)	37
Bakuchiol	0.3	35
Salicylic acid	29.6 (IC ₅₀)	12
Salicylic acid	14.8	None
Salicylic acid	58	12
Bakuchiol+Salicylic acid	0.3 + 14.8	27
Bakuchiol+Salicylic acid	0.6 + 29.6	46
Bakuchiol+Salicylic acid	0.6 + 59.2	60
Bakuchiol+Salicylic acid	0.6 + 148	62

(Figure 3)

Comparison of inhibitory activity against Cutibacterium acnes between bakuchiol and salicylic acid

*Ref: Bakuchiol in the management of acne-affected Skin.

ANTIOXIDANT (SCAVENGING DPPH FREE RADICALS)

IC₅₀:

The concentration of antioxidants required to inhibit lipid peroxidation or scavenging 50% DPPH free radicals.

Generally speaking, the lower the IC₅₀ value, the higher the antioxidant activity.

The determination results of DPPH scavenging activity showed that with the increase of the concentration of Zley-PE601-Elmtrifun, the scavenging activity of DPPH free radicals was significantly enhanced, and it has a dose-response-relationship with concentration. The IC₅₀ value of Zley-PE601-Elmtrifun was 0.047mg/ml.

**ZLEY TESTING SERVICES SHAANXI LTD.
Test Report**

No:ZLEY-SX-2022067

Table 2 The DPPH clearance test results

Sample	Concentration (mg/mL)	Clearance mean value (%)	SD (%)	IC ₅₀ value
Vitamin E	0.01	29.98	0.39	0.030mg/mL
	0.02	43.22	0.76	
	0.04	62.93	0.66	
	0.08	90.33	0.68	
PE601-Elmtrifun	0.025	39.85	0.82	0.047mg/mL
	0.05	54.54	0.65	
	0.1	68.77	0.93	

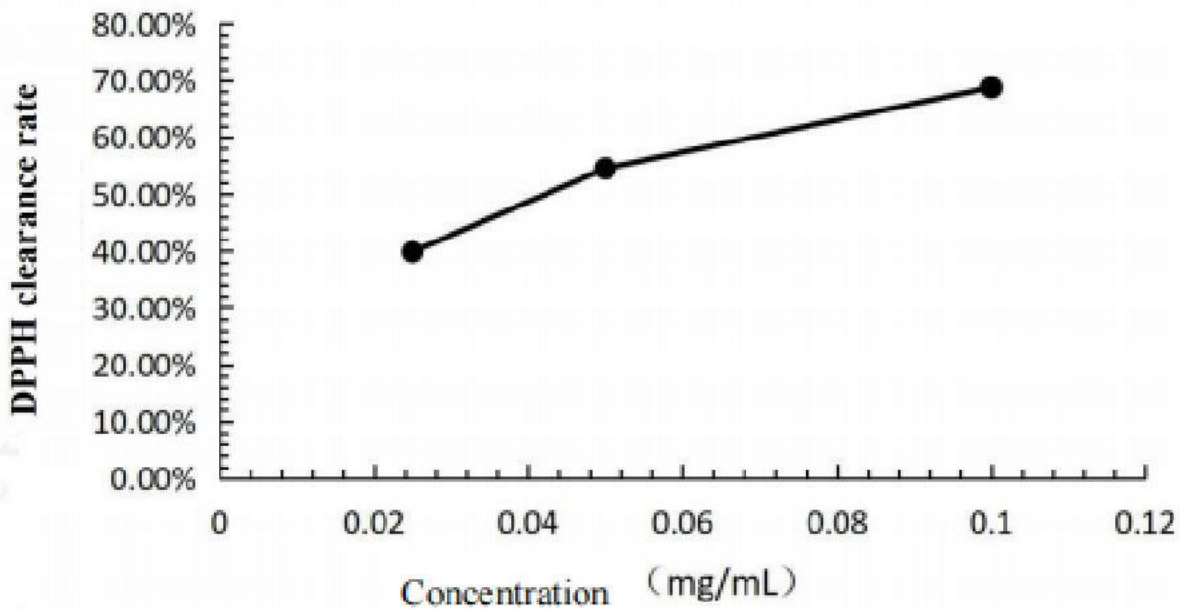


Figure 1 The relationship curve between ZLEY®PE601-Elmtrifun concentration and DPPH scavenging activity

*Ref: Bakuchiol in the management of acne-affected Skin.

ANTIOXIDANT (INHIBIT LIPID PEROXIDATION)

Lipid peroxidation is a chain reaction of a series of free radicals. The reaction of highly active free radicals and lipids especially polyunsaturated fatty acids(PUFAs) is a common oxidation reaction of unsaturated fatty acids in living organisms.

- Lipid peroxidation and skin aging: Lipid peroxidation damages membrane integrity and barrier function, ultimately leads to cell apoptosis and injury, which accelerates the aging process of our skin.
- Lipid peroxidation and skin inflammation: Membrane lipids can be converted into leukotrienes (LT) and prostaglandin G2 under the action of lipoxyase and reactive oxygen species, and MDA can be produced under internal peroxidation, which leads to a vicious cycle of free radicals ⇒ inflammation ⇒ aging ⇒ free radicals, it makes the inflammatory response progressively worse.

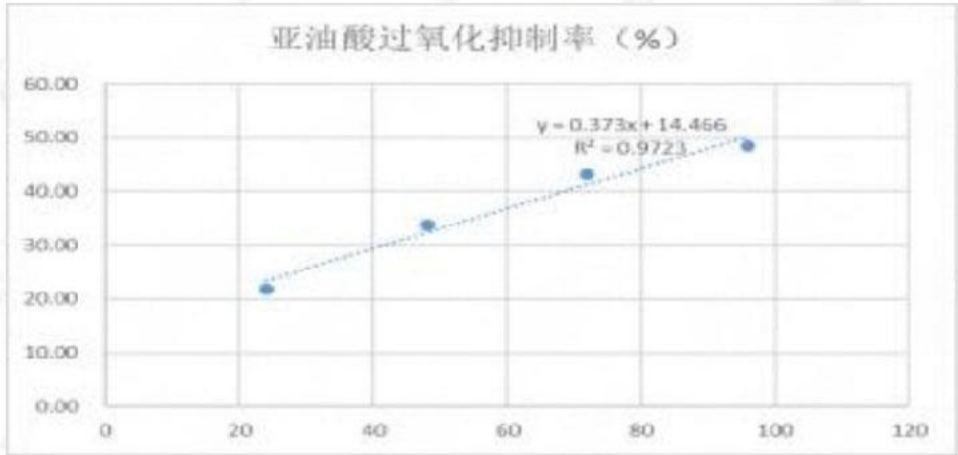
The test results of linoleic acid peroxidation inhibition rate showed that the inhibition rate of 0.25% Zley-PE601-Elmtrifun on linoleic acid peroxidation increased significantly with time goes on, the inhibition rate was 21.82% after 24h, and it was reached 48.51% after 96h.

4. Result

4.1 The result are as follow

Sample name	Sample concentration(mg/mL)	OD500nm	OD500nm Control	Linoleic acid inhibition rate(%)	Time
ZLEY®PE601-Elmtrifun	2.5	0.283	0.362	21.82	24h
		0.286	0.432	33.80	48h
		0.290	0.511	43.25	72h
		0.294	0.571	48.51	96h

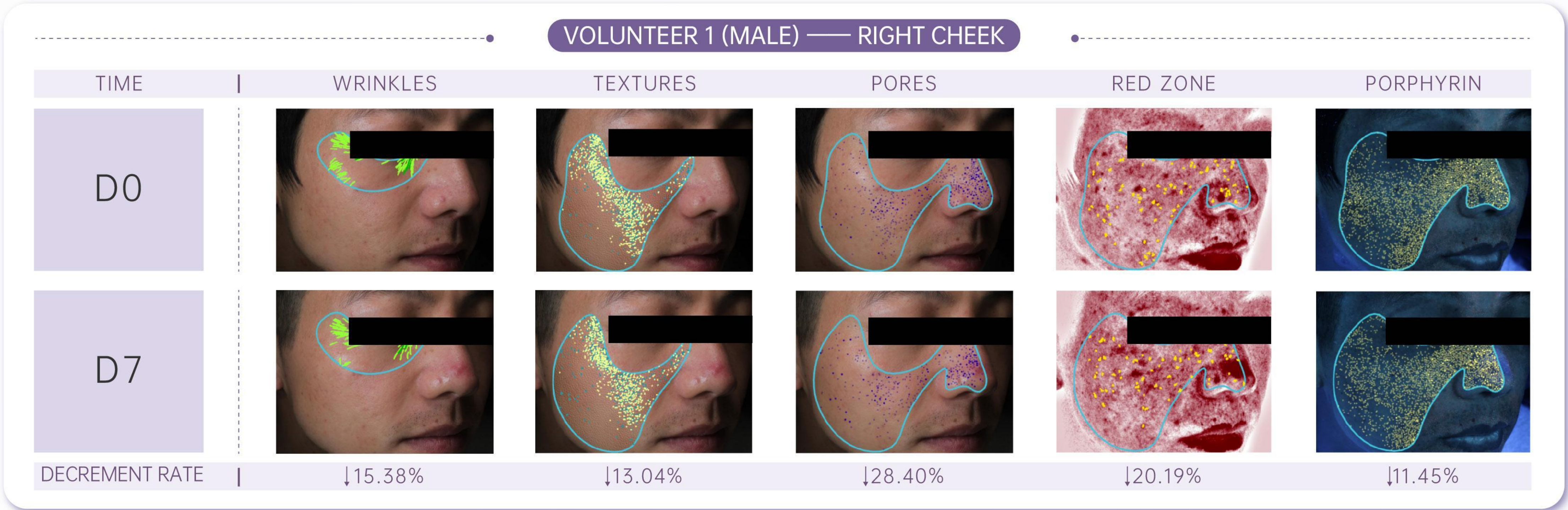
4.2 LEY®PE601-Elmtrifun, the curve of linoleic acid peroxidation inhibition over time is as follows:



HUMAN BODY EFFICACY TEST

Test method: D0-D7, Volunteers use 2% Zley-PE601-Elmtrifun lotion twice a day, morning and night.

Volunteer 1 (male): After 7 days, wrinkles were reduced by 15.38%, textures by 13.04%, pores by 28.40%, red zone by 20.19%, porphyrin by 11.45%.

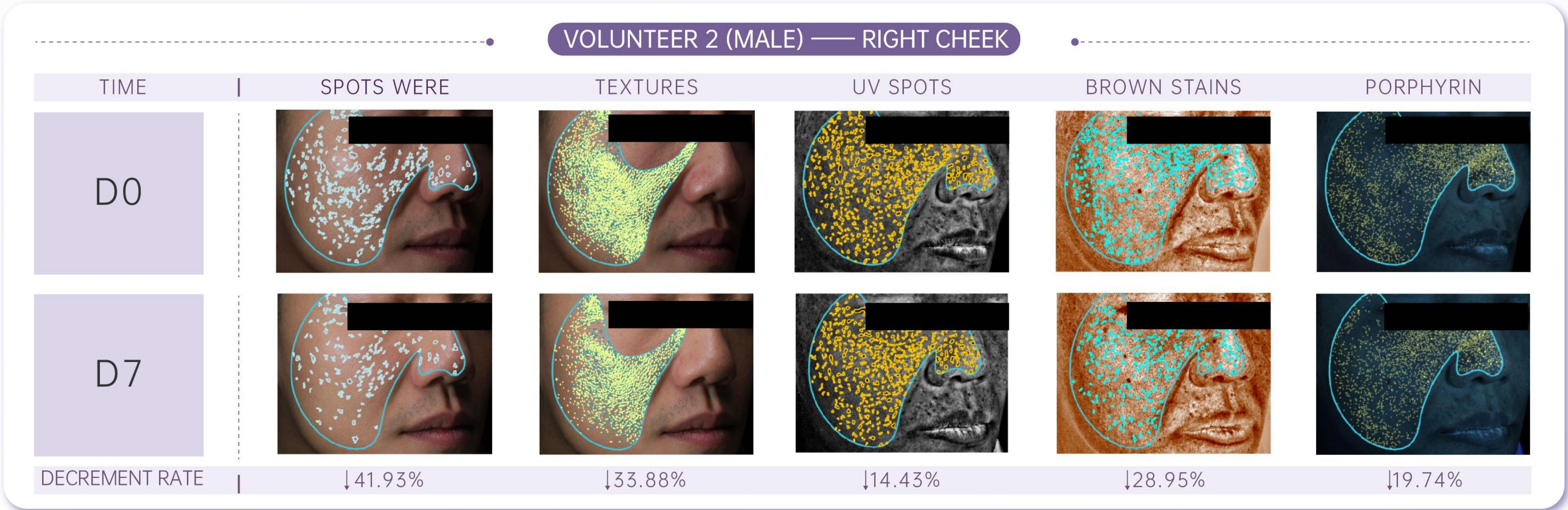


*Red zone: it represents some skin problems related to blood vessels, such as acne, skin inflammation, and sensitive skin, etc.
*porphyrin: it reflects the condition of skin sebaceous gland secretion.
*The above data is from the internal data of ZLEY Biotechnology Laboratory and is for reference only.

HUMAN BODY EFFICACY TEST

Test method: D0-D7, Volunteers use 2% ZLEY®PE601-ELMTRIFUN lotion twice a day, morning and night.

Volunteer 2 (male): After 7 days, spots were reduced by 41.93%, textures by 33.88%, UV spots by 14.43%, brown stains by 28.95%, porphyrin by 19.74%.



*UV spots: it mainly refers to the stains caused by UV irradiation.

*Brown stains: it refers to common freckles, chloasma, etc

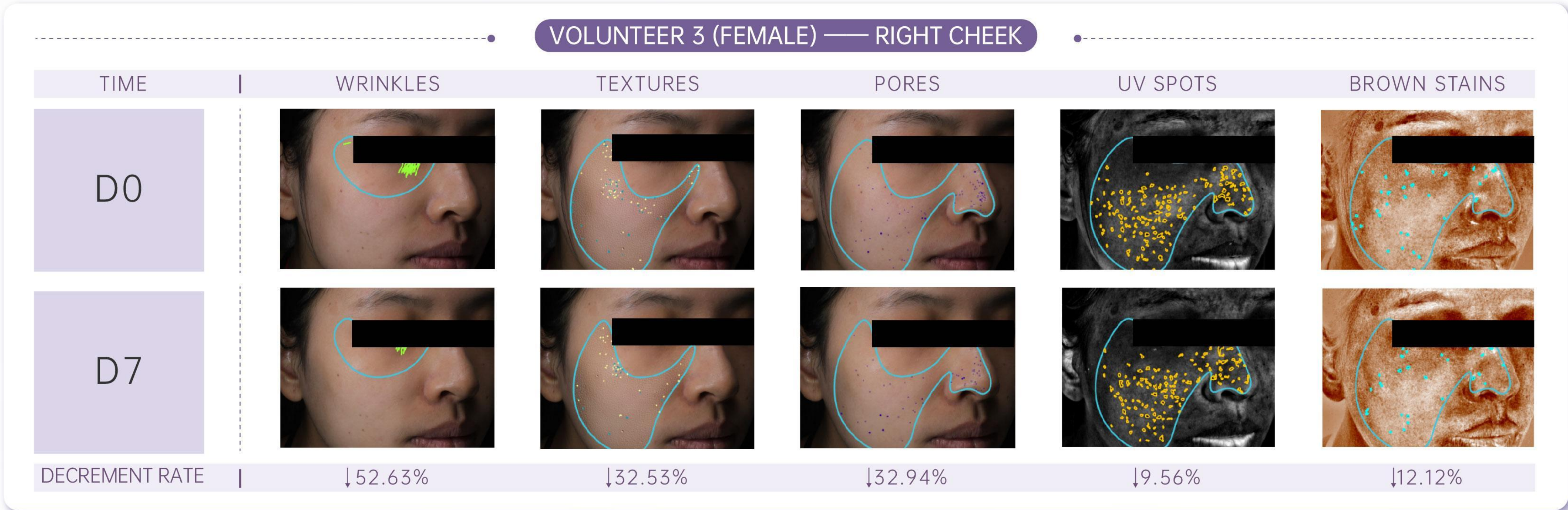
*Red zone: it represents some skin problems related to blood vessels, such as acne, skin inflammation, and sensitive skin, etc.

*porphyrin: it reflects the condition of skin sebaceous gland secretion.

HUMAN BODY EFFICACY TEST

Test method: D0-D7, Volunteers use 2% ZLEY®PE601-ELMTRIFUN lotion twice a day, morning and night.

Volunteer 1 (female): After 7 days, wrinkles were reduced by 52.63%, textures by 32.53%, pores by 32.94%, UV spots by 9.56%, brown stains by 12.12%.

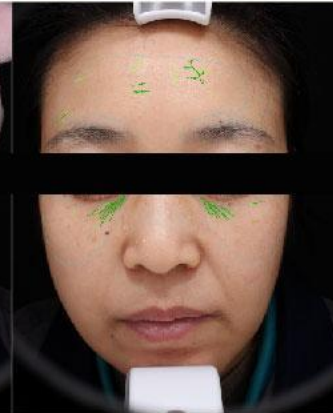
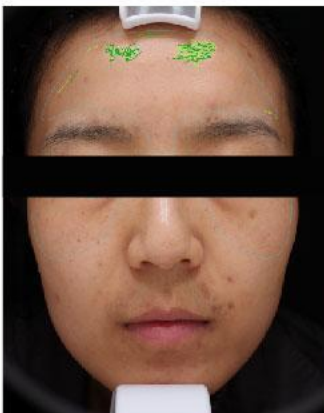
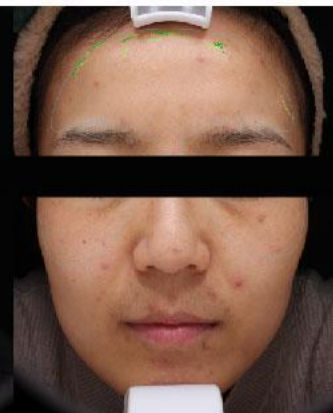


*UV spots: it mainly refers to the stains caused by UV irradiation.
*Brown stains: it refers to common freckles, chloasma, etc
*The above data is from the internal data of ZLEY Biotechnology Laboratory and is for reference only.

HUMAN BODY EFFICACY TEST

(THE WRINKLES CONDITION AFTER 28 DAYS)

Test method:D0-D28, Volunteers use 2% ZLEY®PE601-ELMTRIFUN lotion twice a day, morning and night.

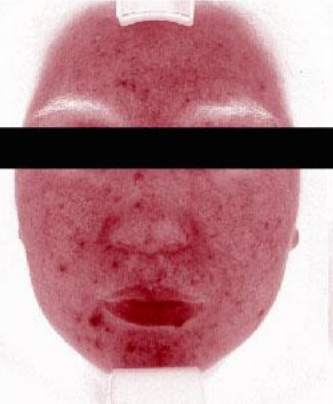
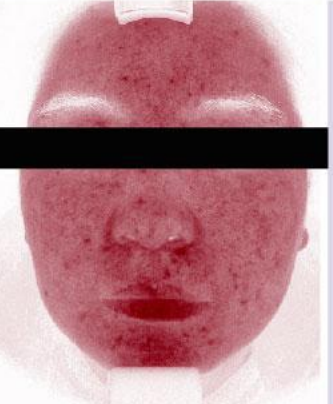
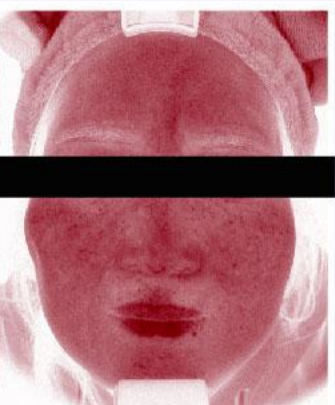
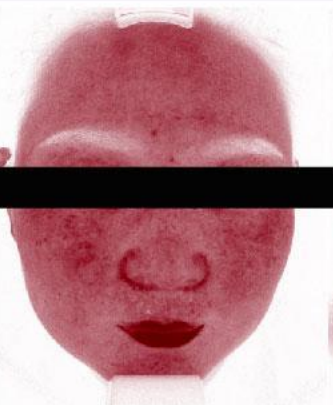
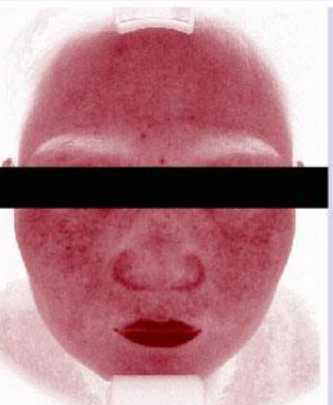
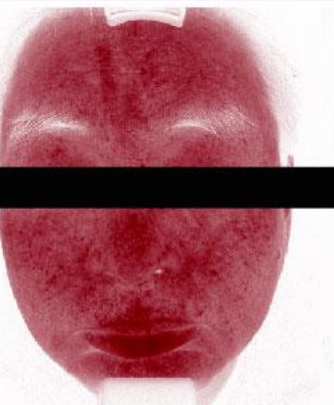
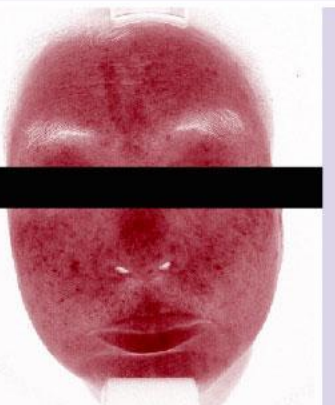
volunteer	0Day	28Day	Wrinkle reduction rate
1			↓ 71.43%
2			↓ 54.55%
3			↓ 50.00%
volunteer	0Day	28Day	Wrinkle reduction rate
4			↓ 41.67%
5			↓ 30.00%
6			↓ 29.93%

The above data is from the internal data of ZLEY Biotechnology Laboratory and is for reference only.

HUMAN BODY EFFICACY TEST

(THE RED ZONE CONDITION AFTER 28 DAYS)

Test method:Test method: D0-D28, Volunteers use 2% Zley-PE601-Elmtrifun lotion twice a day, morning and night.

volunteer	0Day	28Day	Red zone reduction rate	volunteer	0Day	28Day	Red zone reduction rate	volunteer	0Day	28Day	Red zone reduction rate
1			↓ 28.21%	2			↓ 23.97%	3			↓ 23.56
4			↓ 23.20%	5			↓ 19.16%	6			↓ 17.07' %

*Red zone: it represents some skin problems related to blood vessels, such as acne, skin inflammation,and sensitive skin, etc.
*The above data is from the internal data of ZLEY Biotechnology Laboratory and is for reference only.

NO SKIN PHOTOTOXICITY

A test result from the third-party inspection showed that 5% ZLEY®PE601-ELMTRIFUN has no skin phototoxicity.



Test report

Product Name	5% ZLEY®PE601-Elmtrifun	Sample status	Complies
Sample quantity and specifications	3 bottle	Manufacturing date or lot number	20221217
Detection category	Entrusted detection	Shelf life or deadline of use date	2025.07.18
Applicant	ZLEY (Guangzhou) Biological Research Co., LTD	Detect date	2023.12.25
Applicant address	A74, Room 499,89, Yanling Road, Tianhe District, Guangzhou	Detect completion date	2024.01.05
Applicant contact	Chang Tong	Contact information	18626205929
Test project	Ames test		
Test basis or comprehensive judgment principle	(2015 edition) Chapter 67, Skin phototoxicity test technical Specification for Cosmetic Safety		
Detection result: According to the Technical Specification for Cosmetics Safety (2015 edition), the skin phototoxicity test showed no skin phototoxicity			
Remark	Application sends the samples, and the test results are only responsible for the incoming samples		

End of test

The results of skin phototoxicity test for positive controls are shown in Table 1; the results of skin phototoxicity test are shown in Table 2:

Table 1 8-Results of phototoxicity test of methoxypsoralen on guinea pig skin

The animal number	Sex	Weight(g)	Skin reaction integral															
			1h				24h				48h				72h			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Male	212	0	1	0	0	0	3	0	0	0	3	0	0	0	2	0	0
2	Male	220	0	1	0	0	0	3	0	0	0	3	0	0	0	3	0	0
3	Male	238	0	1	0	0	0	3	0	0	0	3	0	0	0	3	0	0
4	Female	241	0	1	0	0	0	3	0	0	0	3	0	0	0	2	0	0
5	Female	227	0	1	0	0	0	3	0	0	0	3	0	0	0	3	0	0
6	Female	243	0	1	0	0	0	3	0	0	0	3	0	0	0	3	0	0

Note: 1,2,3,4 represent different test treatments in 4 areas of the same animal; 1 is positive, no irradiation; 2 is positive, irradiation; 3 is not positive, no irradiation; 4 is not positive; test date of positive control group: 2022-08-26 to 2022-08-29

Table 2 Results of phototoxicity test against guinea pig skin

The animal number	Sex	Weight(g)	Skin reaction integral															
			1h				24h				48h				72h			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Male	281	0	1	0	0	0	3	0	0	0	3	0	0	0	2	0	0
2	Male	279	0	1	0	0	0	3	0	0	0	3	0	0	0	3	0	0
3	Male	274	0	1	0	0	0	3	0	0	0	3	0	0	0	3	0	0
4	Female	262	0	1	0	0	0	3	0	0	0	3	0	0	0	2	0	0
5	Female	259	0	1	0	0	0	3	0	0	0	3	0	0	0	3	0	0
6	Female	265	0	1	0	0	0	3	0	0	0	3	0	0	0	3	0	0

Note: 1,2,3,4 represent different test treatments of the same animal; 1 for test object without irradiation, 3 for 4 without test object, test date: 2023-01-11 to 2023-01-14

Conclusion:

The results of guinea pig skin showed no skin phototoxicity.

Conclusion:

The results of guinea pig skin showed no skin phototoxicity.

PESTICIDE RESIDUE REPORT

A third party test showed that there is no pesticide residues in ZLEY®PE601-ELMTRIFUN.

Test Report

Report Number: SHA01-23010027-JC-03

Name of Sample : ZLEY®PE601-Elmtrifun

Applicant : ZLEY (Guangzhou) Biological Research Co., LTD

Sample Source: Provided by the Applicant

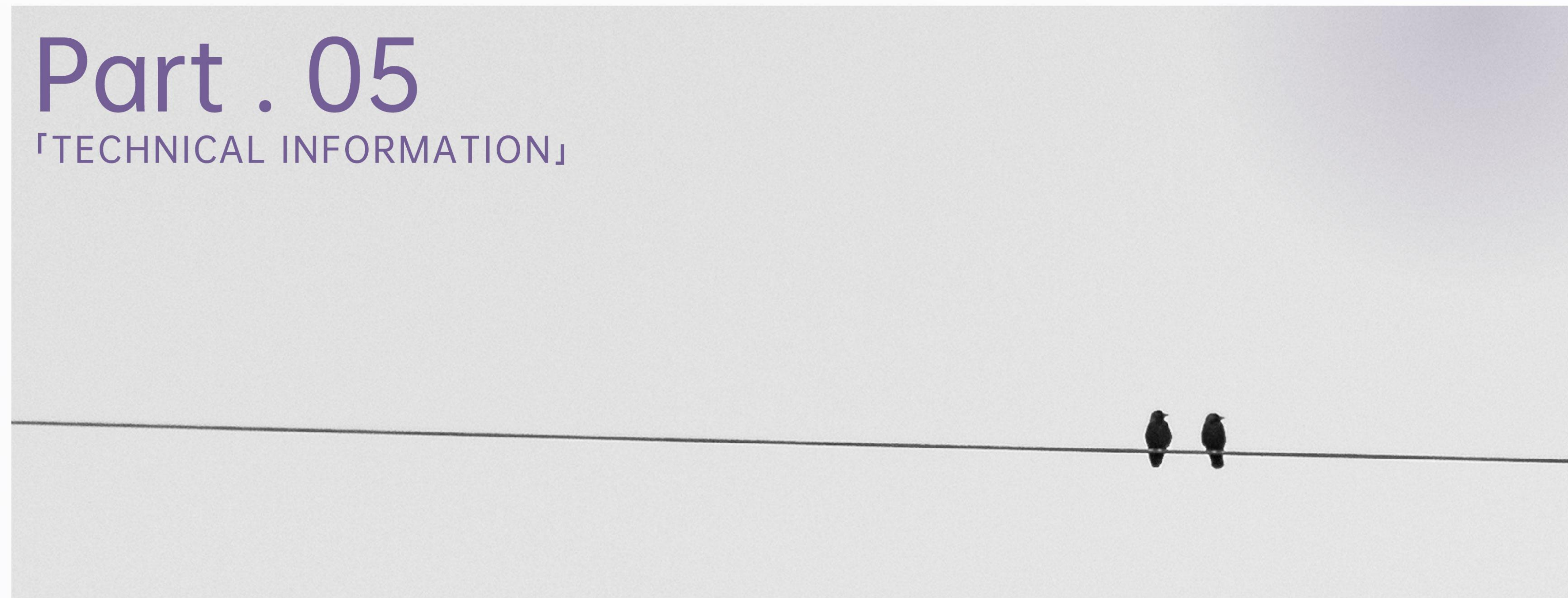
Test Report

No.: SHA01-23010027-JC-03

Test Conclusion					
No.	Test Item(s)	Unit	Test Method	Test Result(s)	MDL
1	α-HCH	mg/kg	Refer to GB 23200.8-2016	<1	1
2	β-HCH	mg/kg	Refer to GB 23200.8-2016	<1	1
3	δ-HCH	mg/kg	Refer to GB 23200.8-2016	<1	1
4	γ-HCH	mg/kg	Refer to GB 23200.8-2016	<1	1
5	o,p'-DDT	mg/kg	Refer to GB 23200.8-2016	<1	1
6	p,p'-DDD	mg/kg	Refer to GB 23200.8-2016	<1	1
7	p,p'-DDT	mg/kg	Refer to GB 23200.8-2016	<1	1
8	p,p'-DDE	mg/kg	Refer to GB 23200.8-2016	<1	1

Part . 05

「TECHNICAL INFORMATION」



「TECHNICAL INFORMATION」

ZLEY HOLDINGS | FOCUS ON MAKING PREMIUM QUALITY RAW
MATERIALS IN THE WORLD



「ZLEY®PE601-ELMTRIFUN」

INCI NAME	ULMUS DAVIDIANA ROOT EXTRACT,BUTYLENE GLYCOL ,WATER
CAS NO.	/,107-88-0,7732-18-5
INGREDIENT SAFETY	NO RISK,1,1(DATA FROM Beauty Evolution Database)
APPEARANCE	Light yellow transparent liquid
RECOMMENDED DOSAGE	0.5%-5.0%
SOLUBILITY	Slightly soluble in water, easily soluble in ethanol, isopropyl alcohol,propylene glycol, and other alcohol substances
PH RECOMMENDED RANGE	Stable in the PH=4-8
FORMULATIVE OPERATION	Just add it into emulsifying system and mix it
APPLICATION	The products for Anti-aging,Anti-oxidant,Whitening,Ance Removal(Serum,Essence,Cleanser,Mask ect.)
COMPETITIVE ADVANTAGE	1.Botanical Retinol 2.Bakuchiol derived from natural plant 3.Efficacy Go With Safety:Non-photosensitive,For day and night use,Mild and Non-irritating,No Need to build up skin tolerance. 4.New Ideas for Anti-aging • a.Mitochondria in Precise skincare:Inspired by Nobel technology,It awakens the skin's ATP kinetic energy and Revitalizes skin cells • b.Respiratory technology:Promoting the expression of hypoxia-inducible factor HIF-1 a , thereby facilitating the cellular transport of oxygen(E.g GUERLAIN ORCHIDEE IMPERIALE) • c.Oxygen-activated skincare:Promoting the expression of HIF-1 a ,It gives a yoga-like oxygenation effect, thus increasing the oxygen supply to the skin, improving and creating healthier skin completely. • d.Longevity Gene-SIRT-1 Skincare:Anti-aging from the root,Cultivating self-healing ability of skin,Resisting external irritation,and finally it can gain the effect of skin renewal.(E.g Estée Lauder) 5.New Ideas for Whitening • a.Inhibit the dendrites,which is the transmissive pipeline for melanosomes • b.Inhibit the formation of primary cilia in melanocytes

ANTI-AGING&WHITENING CREAM

PHASE	COMPONENTS	INCI	DOSAGE/%	SUPPLIERS
A	Deionic water	Water	To 102	—
	ZLEY®BIOCARE-PHA	Hydroxyacetophenone	0.50	ZLEY
	ZLEY®BIOCARE-ZHD	1,2-Hexanediol	0.50	ZLEY
	BUTYLENE GLYCOL	Butylene Glycol	6.00	—
	ZEN	Polyacrylate Crosspolymer-6	0.30	—
	PCM	Xanthan gum	0.05	—
	Glycerol	Glycerol	2.00	—
	HA	Sodium Hyaluronate	0.05	—
	ZLEY®EDTA	EDTA	0.02	ZLEY
	ZLEY®DMI	Dimethyl Isosorbide	0.50	ZLEY
	ZLEY®ALL-Allantoin	Allantoin	0.15	ZLEY
B	M68	Cetearyl Glucoside , Cetearylalcohol	3.00	—
	A165	Glyceryl Stearate,PEG-100 Stearate	1.00	—
	LipocireA	Glycerides, C10-18	0.50	—
	GTCC	Caprylic/Capric Triglyceride	2.00	—
	DC200 (350cst)	Polydimethylsiloxane	0.50	—
	ININ	Isononyl Isononanoate	3.00	—
	VB Acetate	Tocopheryl Acetate	0.10	—
C	SL1	Glycerol,Inulin lauryl Carbamate	0.50	—
	EG	Acrylamide/Sodium Acryloyldimethyltaurate Copolymer , Isohexadecane,Polysorbate—80	0.50	—
	2% ZLEY®PE601-ELMTRIFUN	Ulmus Davidiana Root Extract,Butylene Glycol,Water	2.00	ZLEY

「APPEARANCE」

White fine cream

「CORE INGREDIENT」

2% ZLEY®PE601-ELMTRIFUN

「FUNCTION」

Remarkable skin rejuvenation in 7 days,to achieve Whitening and Anti-aging results.

「TECHNOLOGICAL PROCESS」

1.Pre-processing:HA is pre-dispersed in butylene glycol and then added to phase A .

2.Firstly, we weigh compositions of A group correctly, and heat the ingredients in water bath in 80°C(176°F), then homogenize A compositions for 5 mins until evenly, keep it in the same temperature for 20 mins.

3.Secondly,we weigh composition of B group accuratly and heat it in water bath in 80°C,then mix it evenly.

4.At a temperature of 80-85°C,we put B phase into A phase,stirring it 1-3 mins and cooling down.

5.At 60°C,Adding C phase into it and stirring 1-3 mins,then cooling it down.

6.When the temperature is about 40°C(104°F), the product is done well. And we usually keep it still for 24 hours.

Part . 06

「BRAND CASES」



「BRAND CASES」

ZLEY HOLDINGS | FOCUS ON MAKING PREMIUM QUALITY RAW
MATERIALS IN THE WORLD



WINONA Extra Moisturizing Essence

[Main Function]: Moisturizing,Smoothing Skin

[Other Functional Ingredients]: Sodium Hyaluronate,Sodium polyglutamate,Portulaca Oleracea Extract,Tremella Fuciformis Sporocarp Extract,Betaine,Squalane,Camellia Reticulata Seed Oil



MEDATURE PSL Repair Moisturizer 4

[Main Function]: Rebuild skin barrier,Repairing

[Other Functional Ingredients]: Ceramide,Dexpanthenol, β -Glucans,Cholesterol,Helianthus Annuus Seed Oil,Tocopheryl Acetate,Sodium Hyaluronate,Squalane



KANS Peptide Tender Firming Cream

[Main Function]: Lift the eye area and Smooth the wrinkle

[Other Functional Ingredients]: Tocopheryl Acetate, Bacillus Ferment Filtrate,Hydrolyzed collagen,Acetyl Hexapeptide-8, Palmitoyl Tripeptide-5



SHIYANGUIJI Smoothing Repair Lotion

[Main Function]: Reduce sensitivity, Repairing

[Other Functional Ingredients]: Ectoin, Alpha Bisabolol, Sodium Hyaluronate, Ceramide, Sodium Surfactin, Egg Oil, Hydrogenated lecithin



CELL FUSSION C Calming Down Cream

[Main Function]: Repair your skin barrier, Soothing and Anti-redness

[Other Functional Ingredients]: Sodium Hyaluronate, Oat Kernel Extract, β -Glucans, Centella Asiatica Extract, Portulaca Oleracea Extract, Ceramide NP



HAPSODE Sodium Guaiazulene Sulfonate Emulsion

[Main Function]: Double Oil Control, Redness-Reducing and Repairing

[Other Functional Ingredients]: Betaine, Dipotassium Glycyrrhizinate, Olea Europaea Leaf Extract, Madecassoside, Sodium Hyaluronate, Ceramide NP



WINONA Extra Moisturizing Mask

[Main Function]: Moisturizing and Soothing

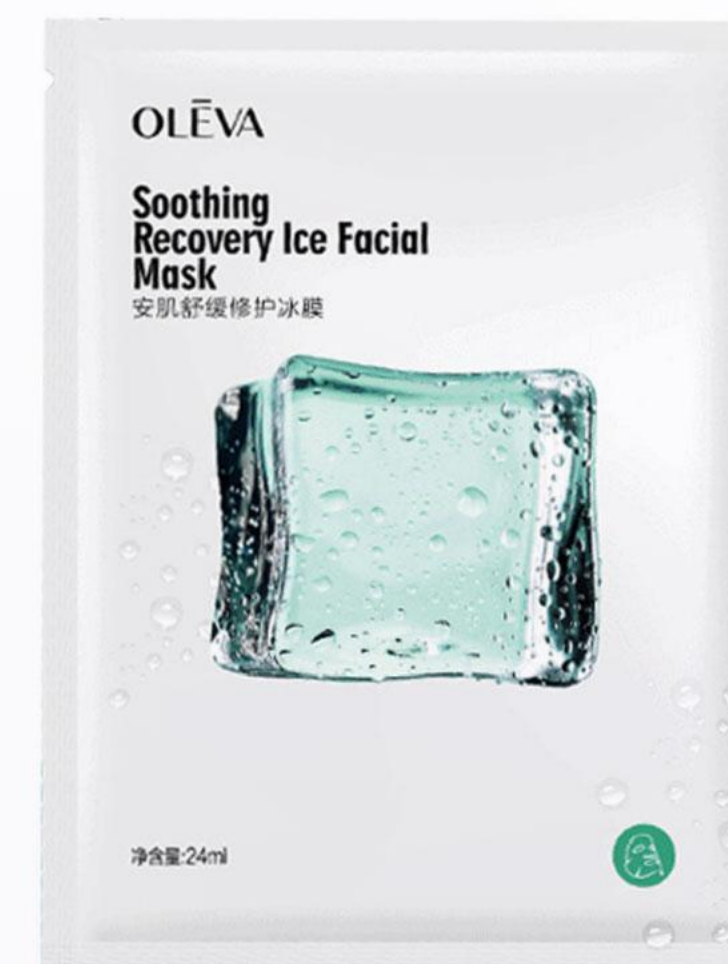
[Other Functional Ingredients]: Sodium Hyaluronate, Sodium polyglutamate, Portulaca Oleracea Extract, Chondrus Crispus Extract, Butylene Glycol, Glycerol, Pentylene Glycol



KANS Ultra-Hydrating Comforting Mask

[Main Function]: Nighttime Hydration, Soothing and Moisturizing

[Other Functional Ingredients]: Tripeptide-1 Copper, Ectoin, Hydroxypropyl Tetrahydropyrantriol, Hydrolyzed Sodium Hyaluronate, Thermus thermophilus fermentate



OLEVA Soothing Recovery Ice Facial Mask

[Main Function]: Soothing and Repairing, Stabilize the skin

[Other Functional Ingredients]: Betaine, Hydrolyzed Sclerotium Gum, Pentavin, Laminaria Japonica Extract, Viola Mandshurica Flower Extract, Allantoin

ZLEY GROUP

[INNOVATIVE ELEMENTS TO AMELIORATE LIFE]

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400-092-8866

EMAIL: SERVICES@ZLEYGROUP.COM



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