



Sino Lion's Holistic Skin Care & Hair Care with Earthsaver Toolbox:

EverGuard™ CY (Capryloyl Glycine)— A Multi-functional Amino Acid Derived Ingredient for Skin and Hair Care

(Internal Use Only)

SINO LION USA

Doris Wang, Jan.12 2024





Introduction of SINO LION

Innovative Amino Acid Technology Platform

SINO LION' s EverGuard™ CY (Capryloyl Glycine)

Potential Usages of EverGuard™ CY (Capryloyl Glycine) in Cosmetics

Commercial Products Containing Capryloyl Glycine

Who is SINO LION?



**Mission: We strive to be a
Global Leader in Affordable,
Green, Natural &
Sustainable Materials**

**Vision: To Improve Quality
of Life of Mankind**



1993, SINO LION was founded in New York

1995-2001, located in World Trade Center

2001, 9/11 Attack-Twin Towers collapsed-Only
Company in PC Industry directly impacted



Now, Mainly in New Jersey US and Nanjing
China

Who is SINO LION?



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[Our Company](#)

[Our Products](#)

[Our Future](#)

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Green Products, Green Manufacturing, Green Life



Who is SINO LION?



Innovation Driven!



Sino Lion R&D Centers



US Office
& R&D Lab



Japan
R&D Lab



China
R&D
Center
II



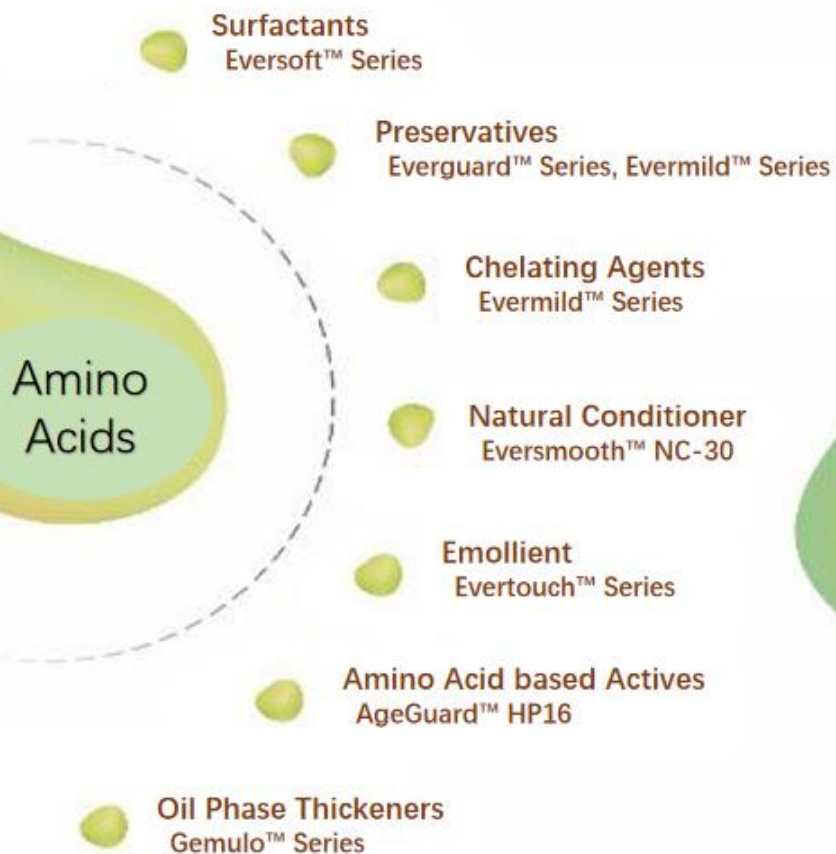
China
R&D
Center
I

Dedicated centers to perfecting **the green and novel** products and formulations of the future!

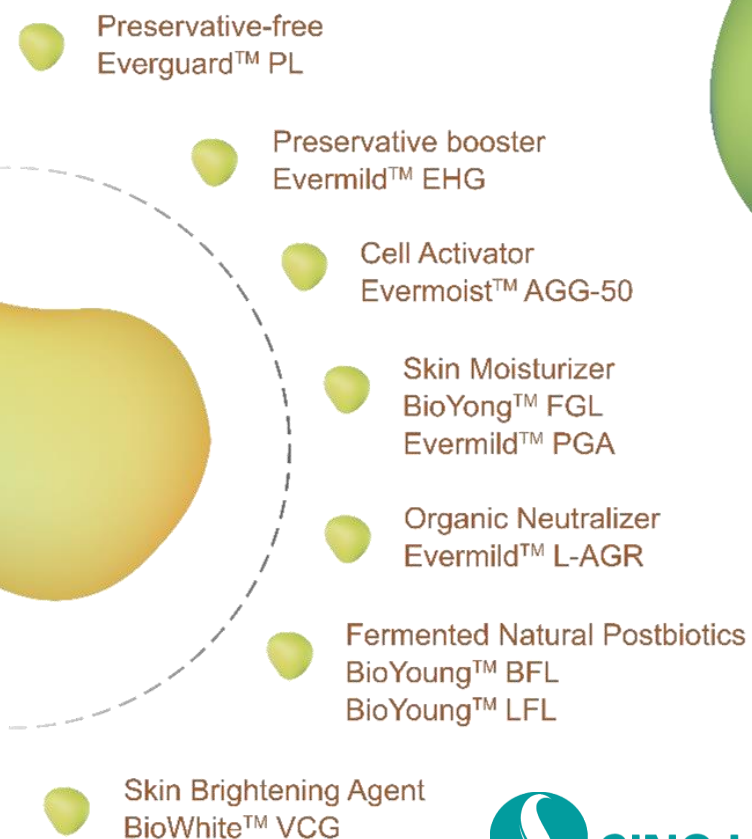
SINO LION creates “green & better choice” ingredients



Green Chemistry Platform



Advanced Biotechnology Platform

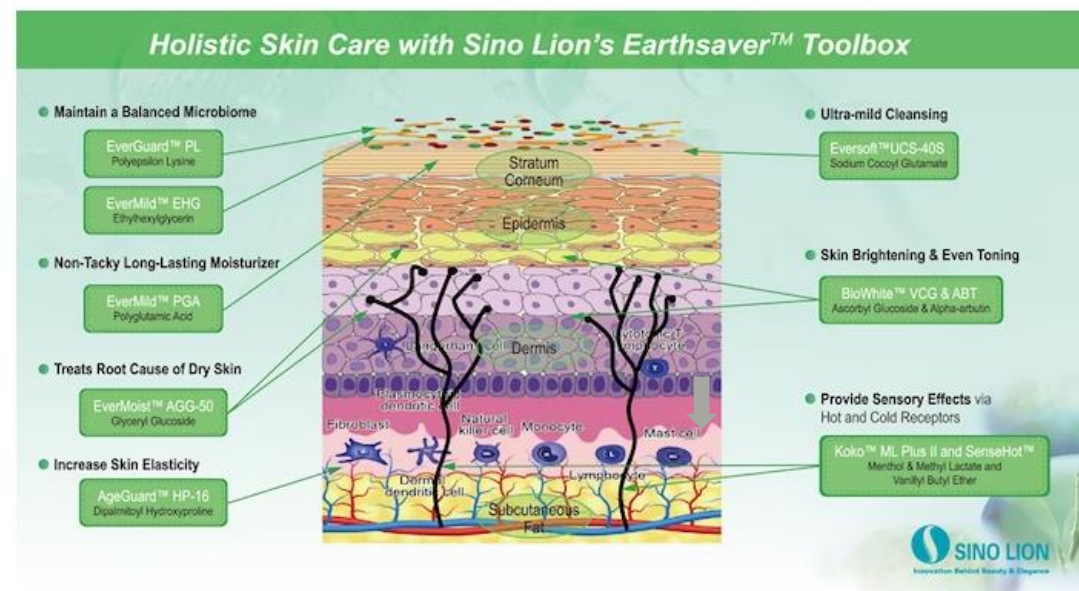


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Holistic Skin Care with Sino Lion's Earthsaver™ Toolbox

Nov 1st, 2021 | From Sino Lion USA



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Sino Lion's Earthsaver™ Toolbox offers all necessary components for cosmetic formulations:

- green surfactants,
- preservatives,
- moisturizers,
- chelating agents,
- emollients,
- conditioners,
- actives, etc.

Earthsaver™ toolbox can impact the cosmetic industry positively by making "Green & Better Choice Ingredients" that are readily available and affordable, contributing to sustainability and a circular economy.

www.cosmeticsandtoiletries.com/formulas-products/skin-care/article/21836457/sino-lion-usa-holistic-skin-care-with-sino-lions-earthsaver-toolbox

<https://www.cosmeticsandtoiletries.com/formulas-products/skin-care/article/21836457/sino-lion-usa-holistic-skin-care-with-sino-lions-earthsaver-toolbox>

To learn more about Sino Lion's holistic approach to skin care with Earthsaver™ toolbox, please visit www.sinolion.com and email info@sinolion.com.



Sino Lion takes a holistic approach to skin care from the top to the bottom of the skin, starting from:

- **maintaining a balanced microbiome on the top layer of the stratum corneum** with our innovative antimicrobials:
 - **EVERGUARD™ PL** (INCI: Polyepsilon Lysine) and **EVERMILD™ EHG** (INCI: Ethylhexylglycerin).
- We follow with **super-mild cleansing on the surface of the stratum corneum**, featuring:
 - **EVERSOFT™ UCS-40S** (INCI: Disodium Cocoyl Glutamate) with 100% Natural Origin Index (NOI) and COSMOS certification.
- Then **from stratum corneum downward through epidermis and dermis**, we feature two skin moisturizers:
 - **EVERMILD™ PGA** (INCI: Polyglutamic Acid), a non-tacky peptide and is a longer-lasting moisturizer than hyaluronic acid that helps to restore skin's barrier function.
 - **EVERMOIST™ AGG-50** (INCI: Glyceryl Glucoside), an innovative endogenous moisturizer that stimulates AQP3 expression treating the root cause of dry skin within, as well as skin-brightening and even-toning agents,
 - **BIOWHITE™ VCG** (INCI: Ascorbyl Glucoside) and **BIOWHITE™ABT** (INCI: Alpha-arbutin).
- Further downward through **the dermis**, we employ a powerful anti-aging agent:
 - **AGEGUARD™ HP 16** (INCI: Dipalmitoyl Hydroxyproline) and two effective sensory agents,
 - **KOKO™ ML Plus II** (INCI: Menthol & Menthyl Lactate) for long-lasting cooling and
 - **SENSEHOT™** (INCI: Vanillyl Butyl Ether) for warming, respectively.



Holistic Skin Care with Sino Lion's Earthsaver™ Toolbox

● Maintain a Balanced Microbiome

EverGuard™ PL
Polyepsilon Lysine

EverMild™ EHG
Ethylhexylglycerin

● Non-Tacky Long-Lasting Moisturizer

EverMild™ PGA
Polyglutamic Acid

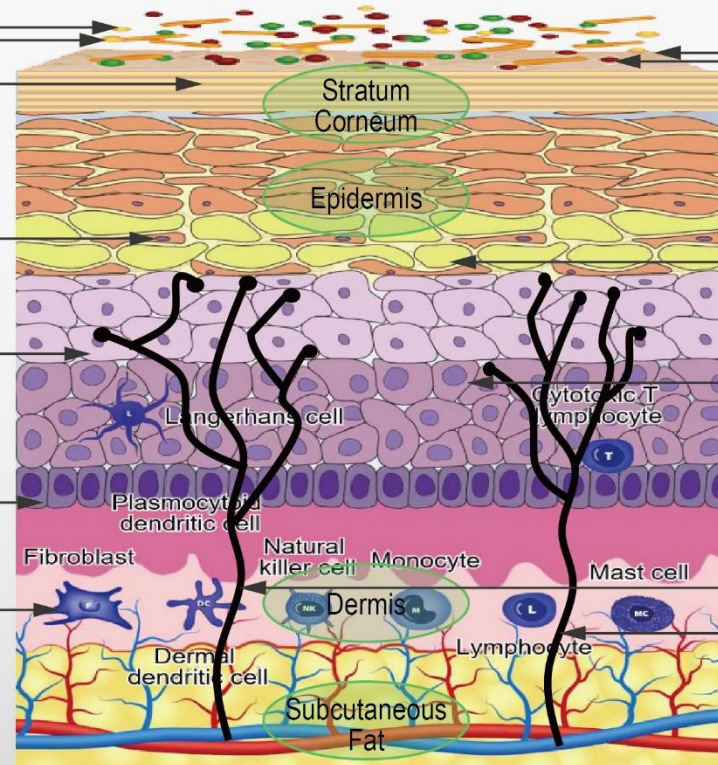
BioYoung FGL-G
Biosaccharide Gum-1

● Treats Root Cause of Dry Skin

EverMoist™ AGG-50
Glyceryl Glucoside

● Increase Skin Elasticity

AgeGuard™ HP-16
Dipalmitoyl Hydroxyproline



● Ultra-mild Cleansing

Eversoft™ UCS Series
Sodium Cocoyl Glutamate

● Skin flora-maintaining

BioYoung BFL & LFL Series
Bifida Ferment Lysate &
Lactobacillus Ferment Lysate

● Skin Brightening & Even Toning

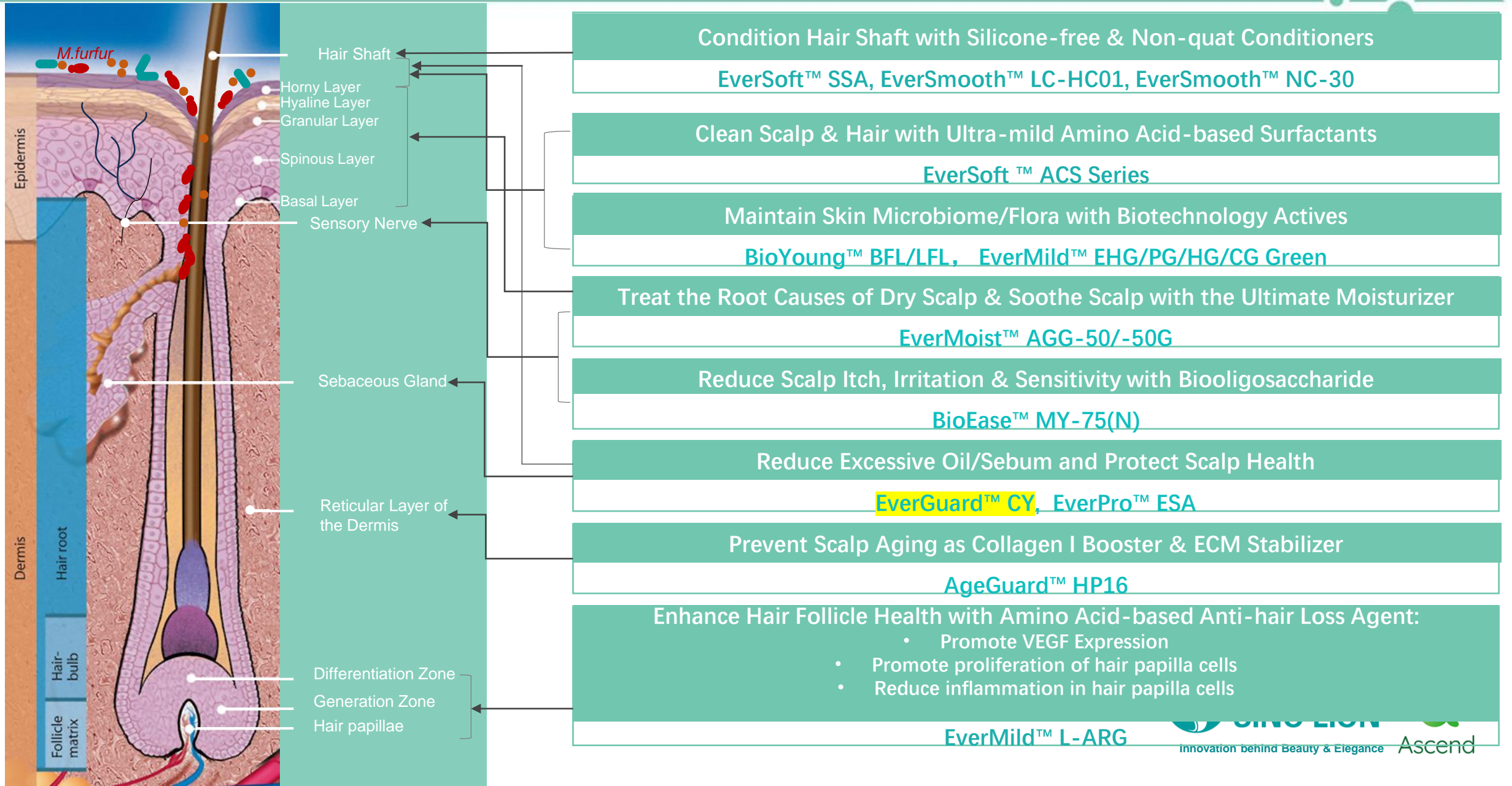
BioWhite™ VCG & ABT
Ascorbyl Glucoside & Alpha-arbutin

● Provide Sensory Effects via Hot and Cold Receptors

Koko™ ML Plus II and SenseHot™
Menthol & Methyl Lactate and
Vanillyl Butyl Ether

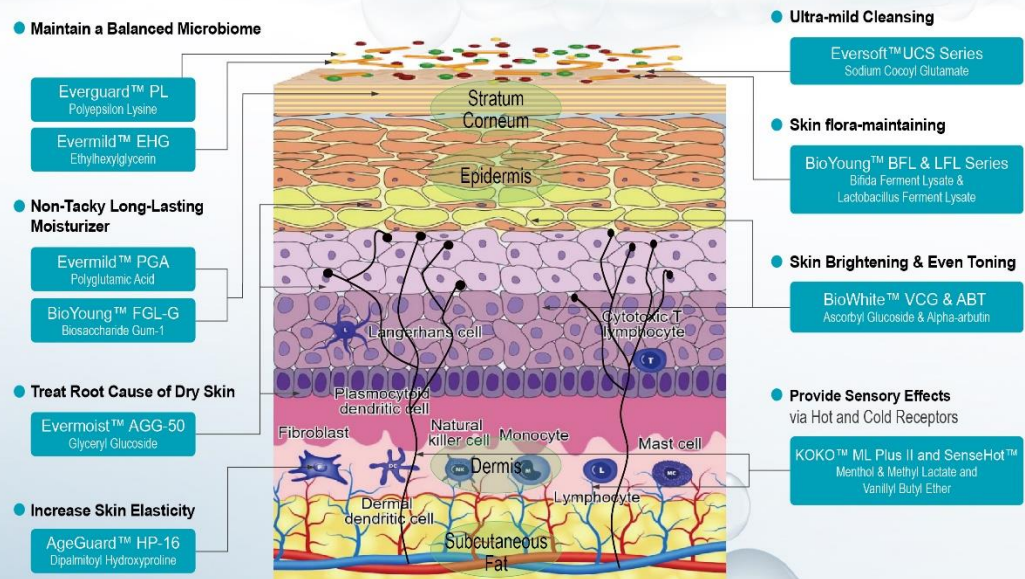


Sino Lion Takes a Holistic Approach to Hair Care from Top to Bottom

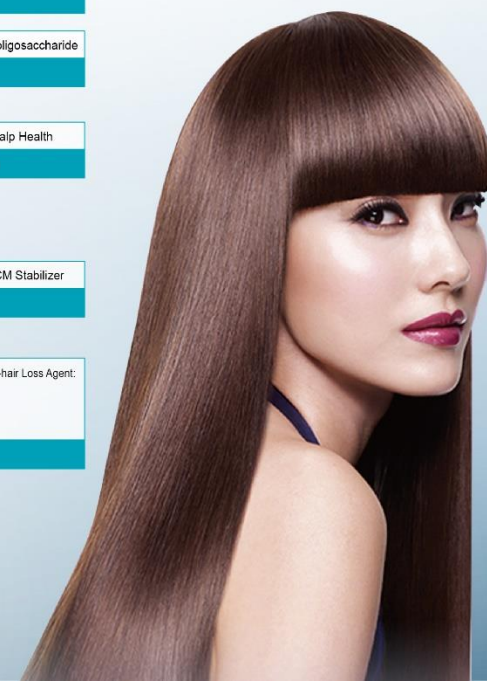
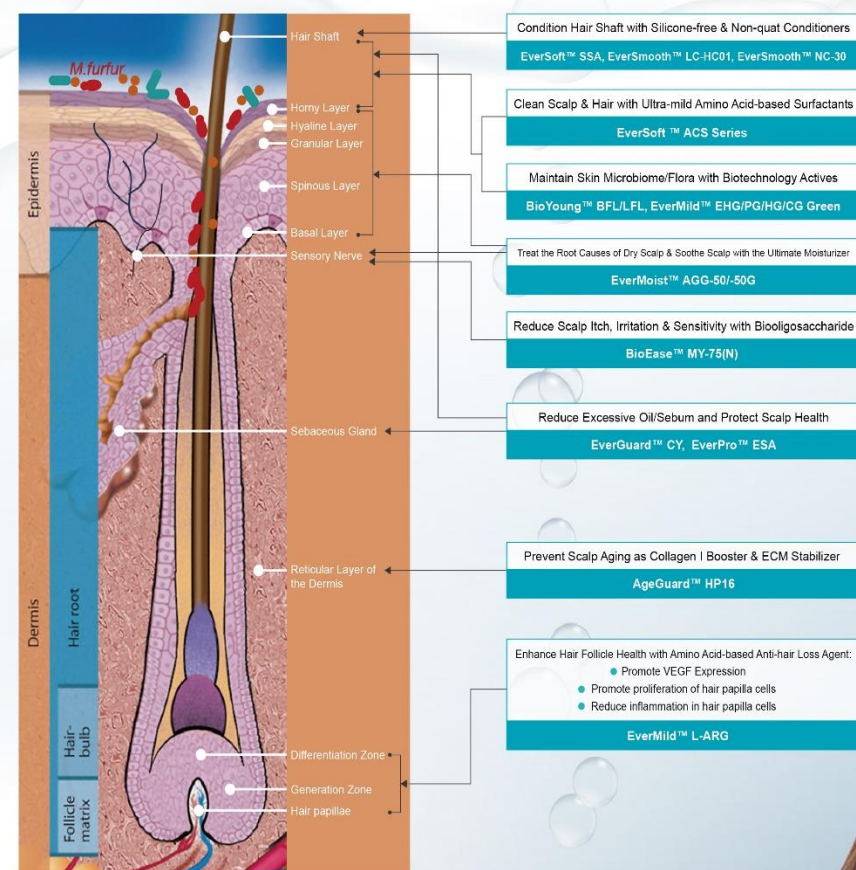


Holistic Skin Care and Hair Care with Sino Lion's Earthsaver™ Toolbox

SINO LION takes care of the various needs of the skin from the top to the bottom: Ranging from maintaining a balanced microbiome on the top layer of the stratum corneum, to super-mild cleansing on the surface of the stratum corneum, followed by a) moisturizing both superficially and via internal circulation through epidermis and dermis, b) anti-aging, even-toning and sensory technology via further down layers through the dermis.



SINO LION takes care of the various needs of the hair and scalp together: Ranging from properly cleansing and conditioning the hair shaft with mild and sulfate-free shampoos and silicone-free conditioners, to maintaining a balanced microbiome/flora on the top layer of the scalp, followed by a) properly cleansing and conditioning the scalp, b) moisturizing by treating the root cause of dry scalp and soothing the scalp through the epidermis and dermis of the scalp; c) reducing scalp itch, irritation, sensitivity and excessive oil/sebum, d). preventing scalp aging through the dermis layer of the scalp, and e) preventing hair loss through the bottom of the hair follicle in follicle matrix and hair bulb layers.



Address: 25B Vreeland Road, Suite 106 Florham Park, NJ 07932

Tel: 00 1 973 887 8886

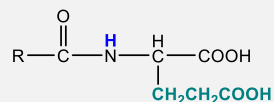
Fax: 00 1 973 850 2288

SINO LION
Innovation Behind Beauty & Elegance
SINO LION USA

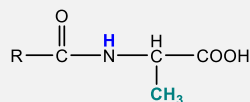
Innovative Amino Acid Technology Platform



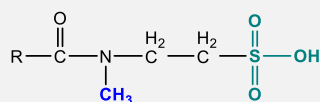
Surfactants



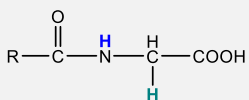
EverSoft™ U series
Glutamate



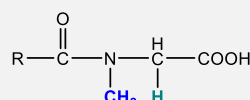
EverSoft™ A series
Alaninate



EverSoft™ T series
Taurate

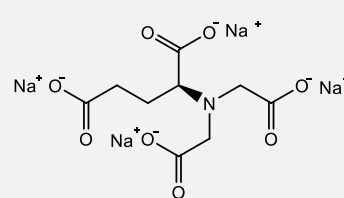


EverSoft™ Y series
Glycinate

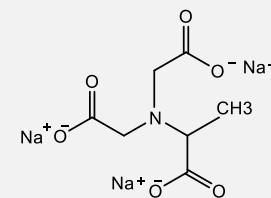


EverSoft™ S series
Sarcosinate

Chelating Agents

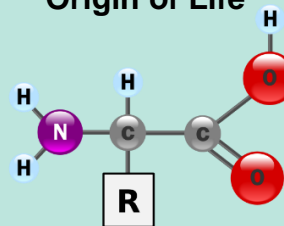


EverMild™ GLDA-30
Tetrasodium Glutamate Diacetate

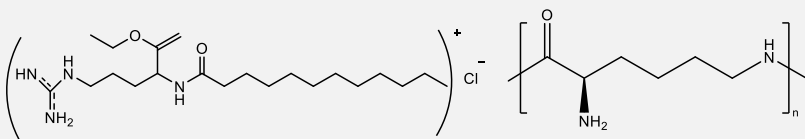


EverMild™ MGDA-30
Trisodium Dicarboxymethyl Alaninate

Amino Acid: Origin of Life



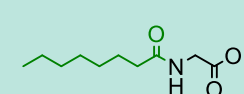
Preservatives



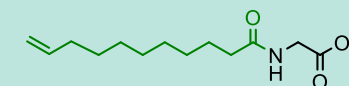
EverGuard™ LAE
Ethyl Lauroyl Arginate HCl

EverGuard™ PL
Polyepsilon Lysine

Actives & Conditioners



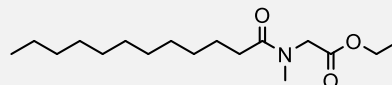
EverGuard™ CY
Capryloyl glycine



EverGuard™ UY
Undecylenoyl Glycine

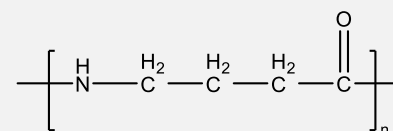
more is coming

Emollient



EverTouch™ LPS-100
Isopropyl Lauroyl Sarcosinate

Moisturizer



EverMild™ PGA
Polyglutamic Acid



EverGuard™ CY(Capryloyl Glycine), Amino Acid-based Multifunctional Protector

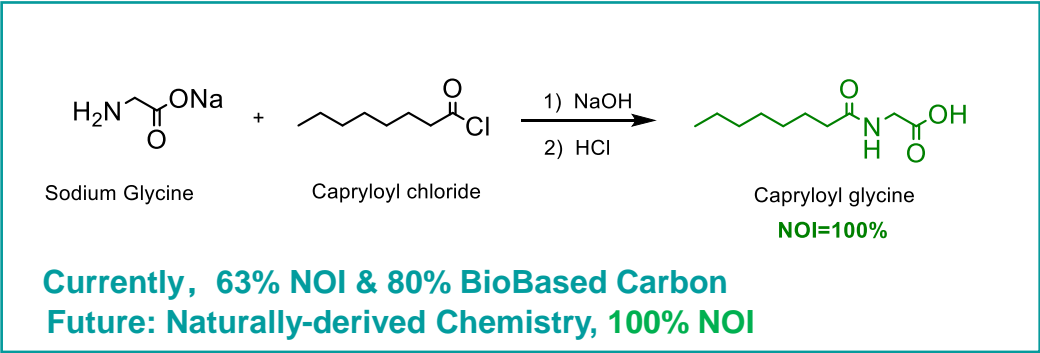
NEW

Amino Acid-based Technology
Scalp/Skin Proctor & Oil Balancer
(Anti-dandruff, Anti-acne, Deodorant, etc.)

NCI Name: Capryloyl Glycine
CAS NO.: 14246-53-8
EC NO.: 238-122-3
Functions:

Antimicrobial, enhance antiseptic effects
Anti-seborrheic (anti-dandruff)
Anti-sebum (oil-control)
Deodorant
Hair conditioning
Surfactant (cleansing)

CCCCCCCCC(=O)NCC(=O)O



Items	Specification
Appearance (25°C)	White to pinkish beige powder
Color (Hazen, 10% in ethanol solution)	100 Max.
Acid value (Dry basis)	265.0-300.0 mg KOH/g
Free caprylic acid (Dry basis)	1.0 % Max
Mineral acidity (as HCl)	0.5 % Max
Loss on drying (%)	1.0 % Max
Sulphated ash	1.0 % Max
Total nitrogen (dry basis)	6.5-7.5 %



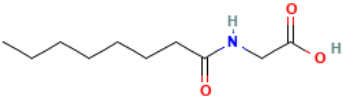
Capryloyl Glycine: EWG Green



1

Data: Limited

Capryloyl Glycine



Capryloyl Glycine is an acylation product of glycine with caprylic acid chloride.

Common concerns

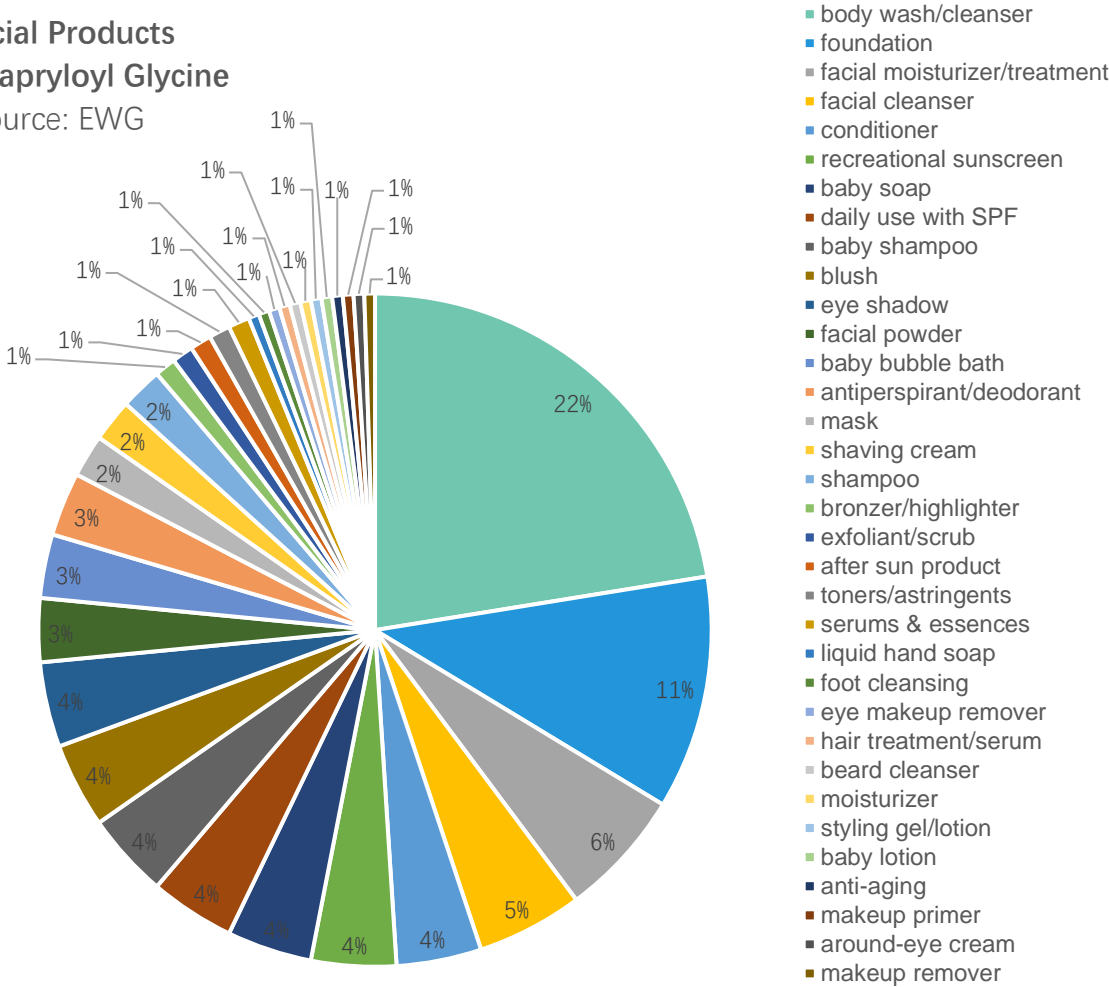
See how this product scores for common concerns.

● LOW	Cancer
● LOW	Allergies & Immunotoxicity
● LOW	Developmental and Reproductive Toxicity
● LOW	Use Restrictions

Commercial Products
Containing Capryloyl Glycine

Data Source: EWG

- Skin Care
- Make Up
- Hair Care
- Deodorant





Safe & Pure Amino Acid-based Multifunctional Protector

▣ For SKIN



- Regulate sebum secretion
- Balance water and oil levels
- Maintain skin microbiome
- Inhibit growth of C. acnes
- Prevent acne
- Soothe the skin

Refer MIC:
0.025% @ pH=5 on S. aureus;
0.12% @ pH=5 on S. epidermidis,
0.06% @ pH=7, 0.75% @ pH=5
on C.acnes

▣ For Hair



- Regulate sebum secretion
- Balance water and oil levels
- Maintain scalp microbiome
- Inhibit growth of M. furfur
- Reduce dandruff
- Reduce scalp irritation

Ascend MIC:
0.125% on
M.furfur

Refer MIC:
0.75% @ pH=5 on
M. furfur

▣ For Body



- Regulate pH levels
- Inhibit the growth of odor-causing microbes
- Enhance antibacterial effectiveness
- Gentle and safe
- Preservatives-free



Oil-controlling Experiment

Oil Red staining on adipocytes: Oil Red O is a lipophilic dye that dissolves readily in fats, allowing for staining of sebaceous gland cells (SZ95). The experiment aims to observe the effects of EverGuard™ CY on sebum secretion before and after treatment.

**Control Group-without
EverGuard™ CY**



VS

0.0156% EverGuard™ CY



Compared to the control group, sebum secretion decreased by 13.8% at a concentration of 0.0156% CY.

Potential Usages of Capryloyl Glycine in Cosmetics

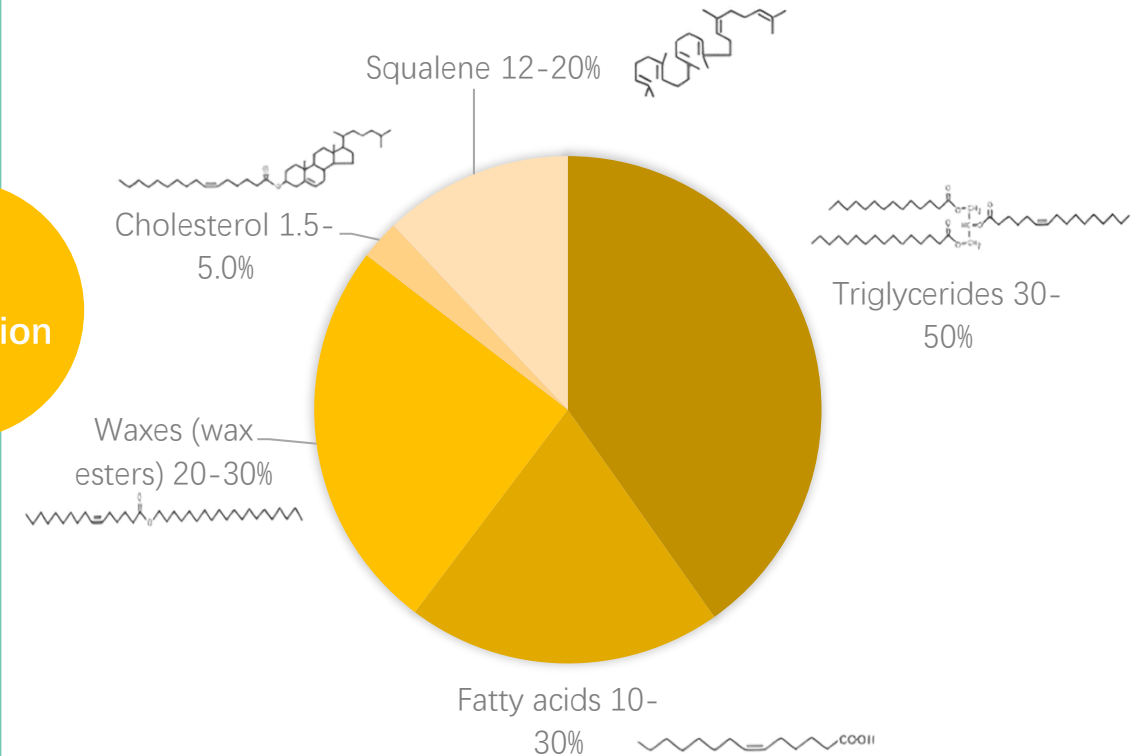


The extended issues related to excessive sebum secretion



Sebum Composition

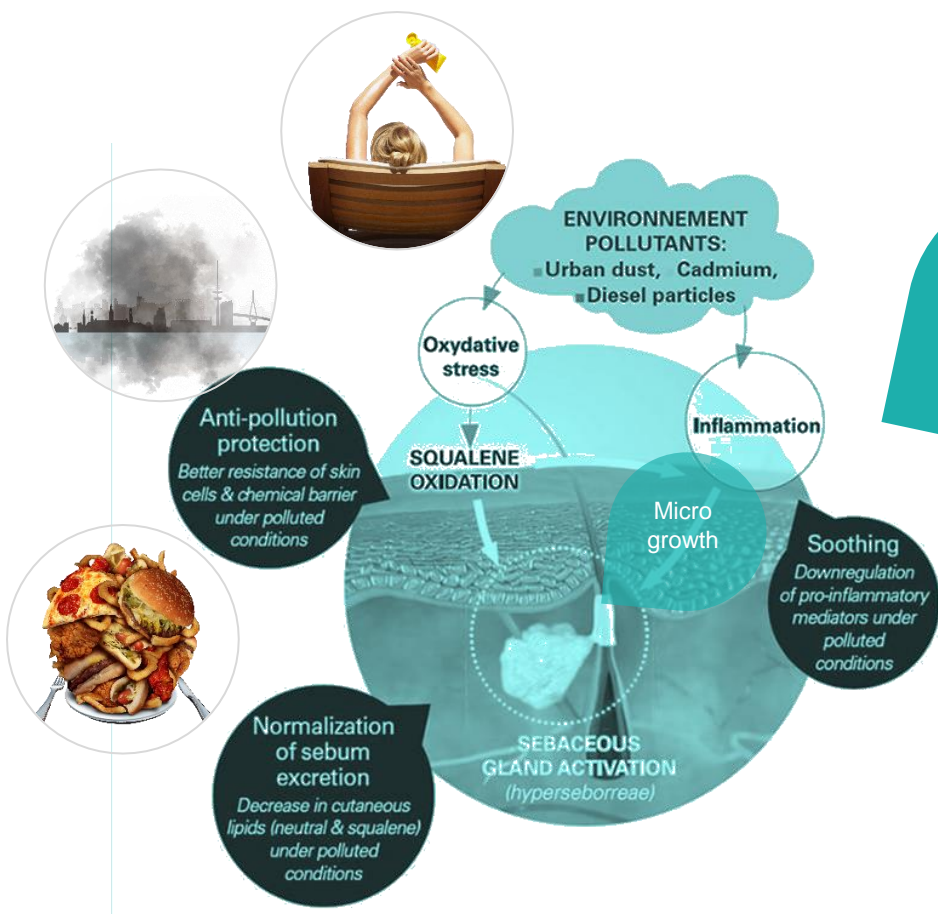
Sebum is a complex lipid mixture composed of:



Potential Usages of Capryloyl Glycine in Cosmetics



Balance oil secretion and solve extended issues related to excessive sebum secretion



Answer

Gentle Cleansing

Clean, Clear, Restore healthy state

01

Exfoliating & Clarifying

Promote wasted keratin metabolism

02

Moisturizing (oil-water balancing)

Treat the root cause of external oiliness and internal dryness

03

Anti-inflammatory & Soothing

Reduce skin inflammation, allergies, and discomfort

04

Antimicrobial & Microbiome-maintaining

Inhibiting growth of Cutibacterium acnes/Propionibacterium acnes, Microsporum furfur and etc.

05

Potential Usages of Capryloyl Glycine in Cosmetics



Clean, Clarify, Hydrate, Soothe, Microbiome-maintain

EverMoist™ AGG-50/-50G

Glyceryl Glucoside, Water, Glycerin and tec.

03
04

BioEase™ MY-75(N)

Hydrolyzed Corn Starch (Maltotetraose), Water.

04
03

Biocarrier™ CD6

Cyclodextrin

03

Minox™ HD

Hexamidine

05

EverSoft™ Series Amino Acid-based Surfactants

U Series: Glutamates
A Series: Alaninates
Y Series: Glycinates
T Series: Taurates
S Series: Sarcosinates

01
02

EverGuard™ CY

Capryloyl Glycine

03
04
05

Customized™ Complex

EverActive™ E-SA-L

Salicylic Acid, Arginine, Water, Hydroxypropyl Cyclodextrin and etc.

02 03
04 05

EverActive™ L-CY

Capryloyl Glycine, Arginine, Water, Hydroxypropyl Cyclodextrin and etc.

ProScalp™ O

Salicylic acid, Capryloyl glycine, Water and etc.

03
04
05

KOKO™ ML Plus II

Menthyl Lactate, Menthol
KOKO™ ML Plus II
Menthyl Lactate

04

BioYoung™ LFL

Lactobacillus Ferment Lysate

05
04
03

BioYoung™ BFL

Bifida Ferment Lysate

03
04
05

ProScalp™ CAD

Hexamidine Diisethionate, Dichlorobenzyl Alcohol, Sodium Cocamidopropyl PG-Dimonium Chloride Phosphate, Water

03
04
05

01 Gentle Cleansing

04 Anti-inflammatory and soothing

02 Exfoliating & Clarifying

05 Antimicrobial and Microbiome-maintain

03 Moisturizing (oil-water balance)



SINO LION
Innovation behind Beauty & Elegance



Ascend

Potential Usages of Capryloyl Glycine in Cosmetics



What makes the oil-control ability of Capryloyl Glycine different from other oil-control ingredients?

01

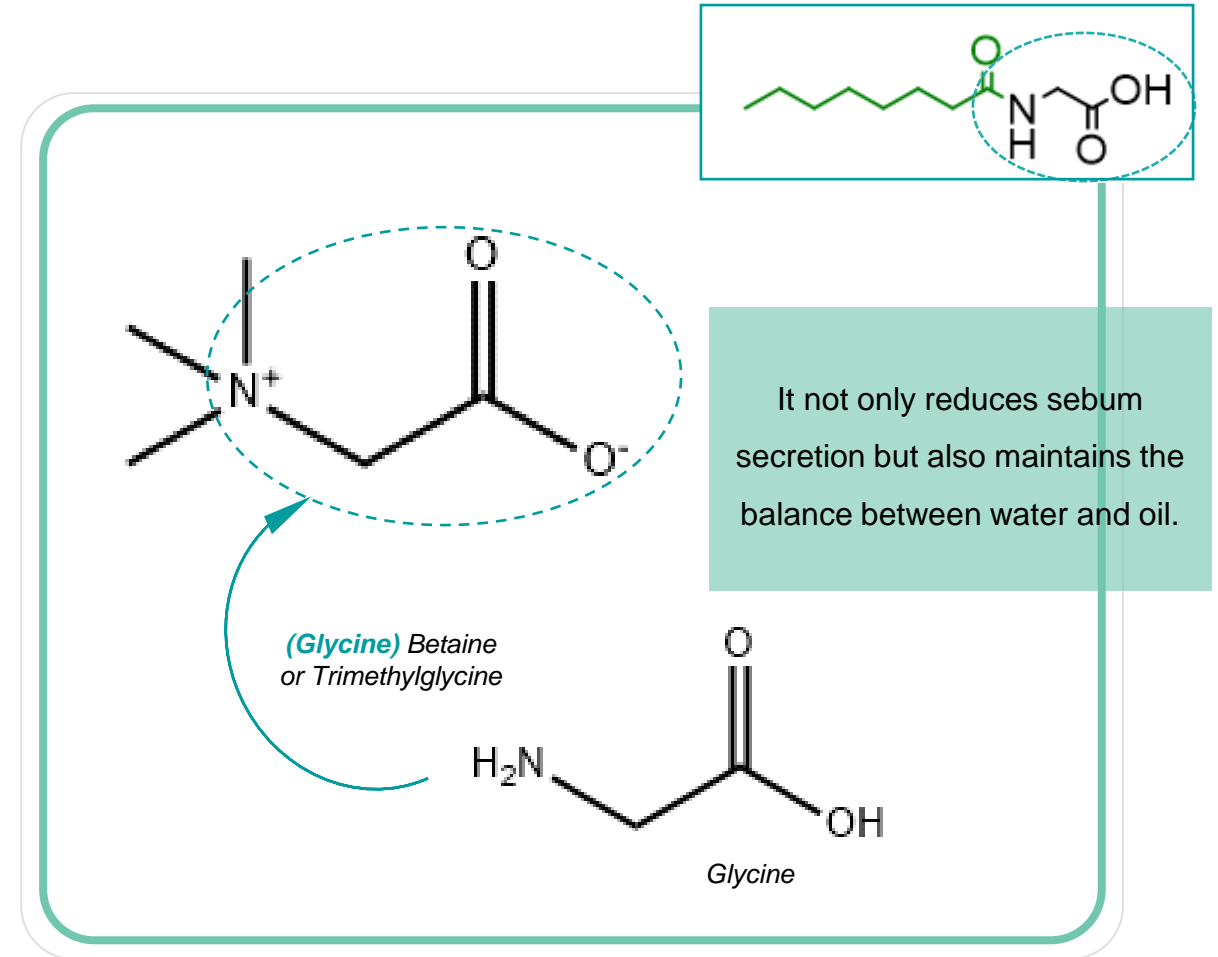
In biological systems, many naturally occurring betaines serve as organic osmolytes

02

A betaine is a specific type of zwitterion (historically, the term was reserved for trimethylglycine, TMG* only),

03

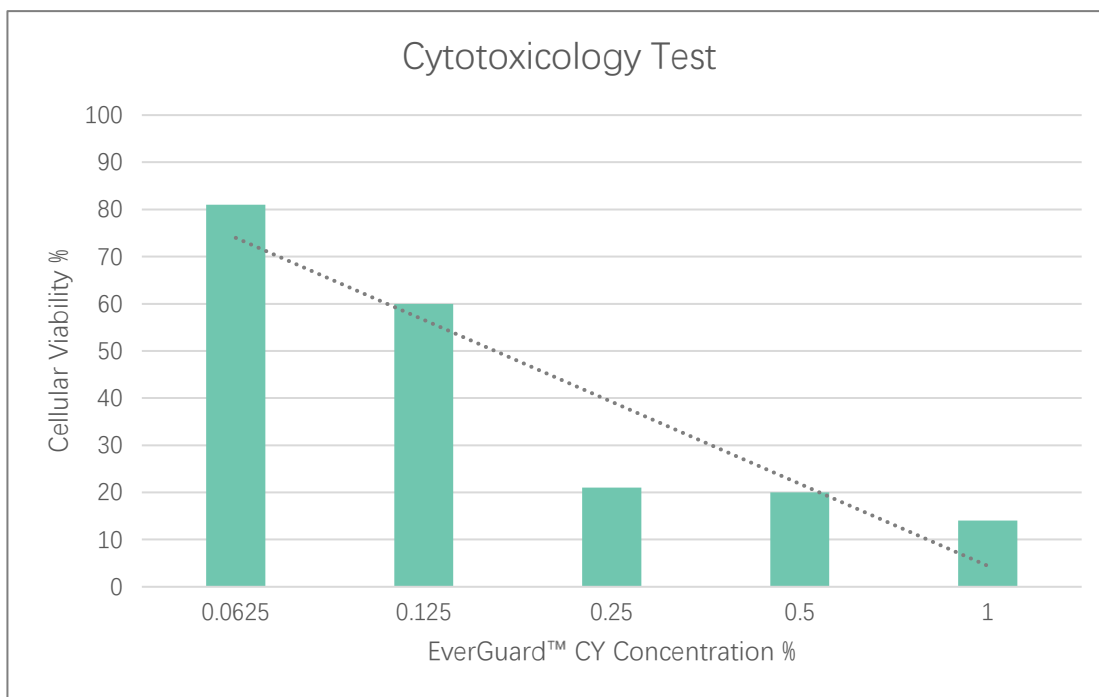
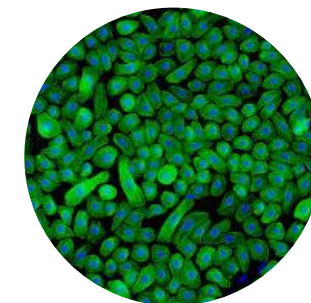
Trimethylglycine (TMG) is glycine derivative that occurs in plants.



Potential Usages of EverGuard™ CY (Capryloyl Glycine) in Cosmetics



Gentle and Safe (Skin/Scalp) — Cytotoxicity of EverGuard™ CY



Summary:

Keratinocytes are the primary type of cell found in the epidermis, the outermost layer of the skin. In humans, they constitute 90% of epidermal skin cells.

MTT₅₀ of EverGuard™ CY on keratinocyte cell is around 0.15% at cellular level, which demonstrates EverGuard™ CY is gentle and mild to skin.

Potential Usages of EverGuard™ CY (Capryloyl Glycine) in Cosmetics

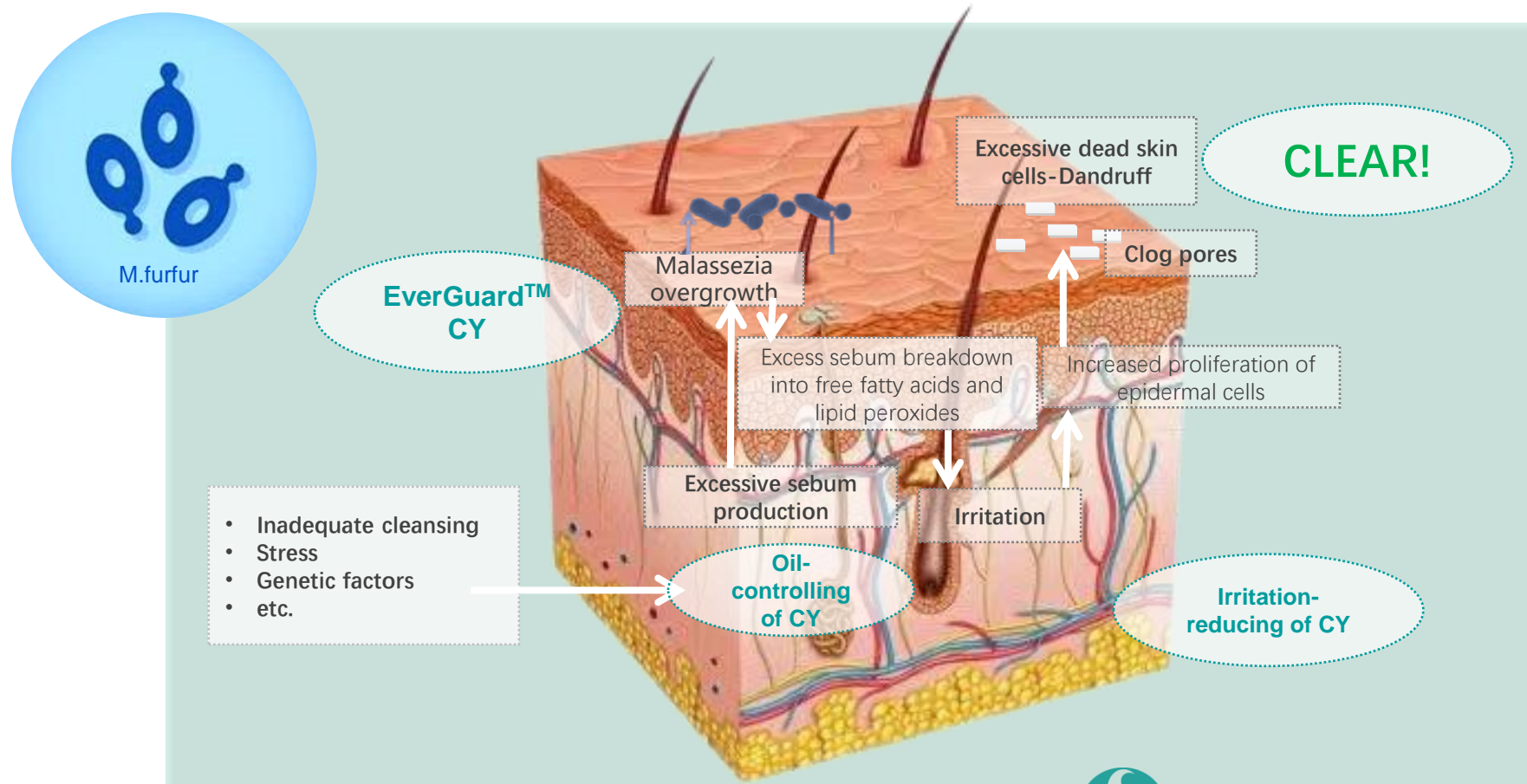


Solution: By controlling oil and removing excess sebum, while inhibiting Malassezia and reducing irritation.

EverGuard™ CY can provide effective relief at each target point and address the issues that arise throughout the entire scalp chain.

For Scalp

- Regulate sebum secretion
- Balance water and oil levels
- Maintain scalp microbiome
- Inhibit growth of M. furfur
- Reduce dandruff
- Reduce scalp irritation

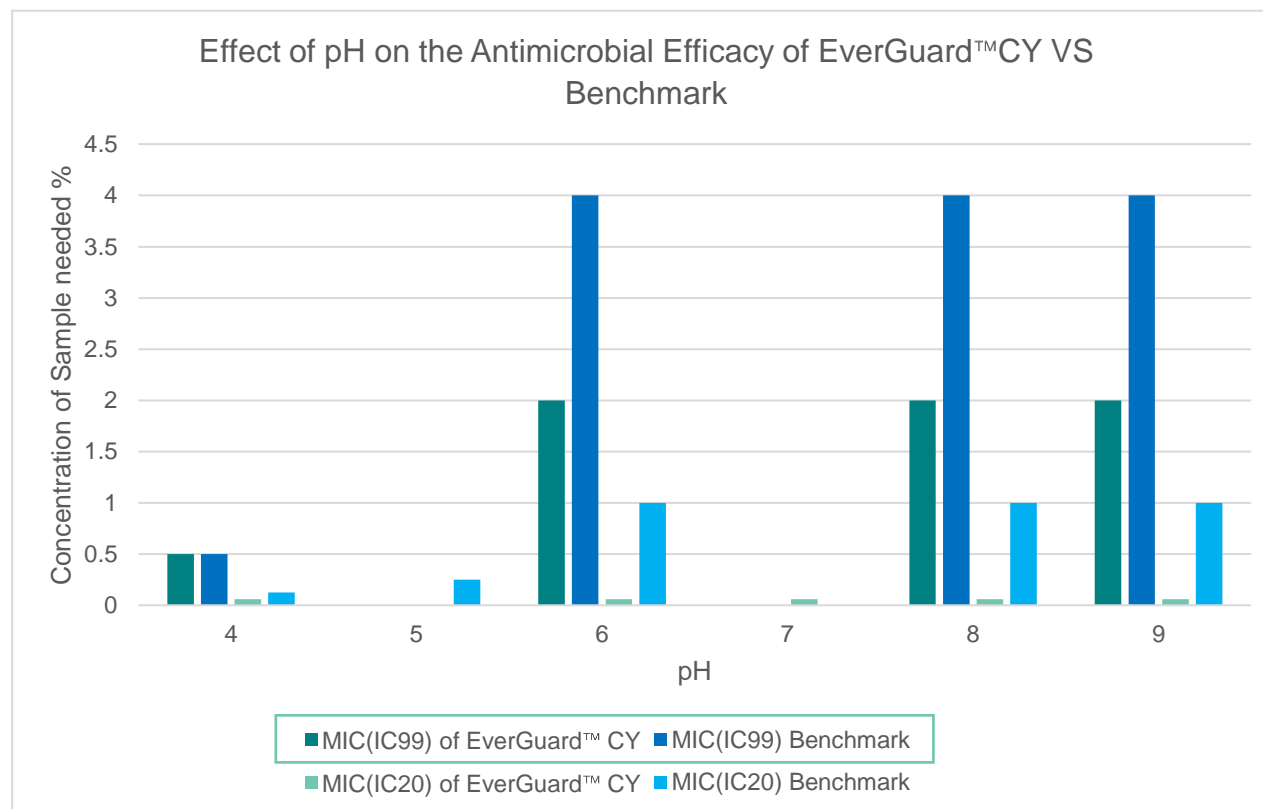


Potential Usages of EverGuard™ CY (Capryloyl Glycine) in Cosmetics



Effect of pH on the Antimicrobial Performance of EverGuard™ CY VS Benchmark

Inhibiting the growth of *M. furfur* (*Malassezia furfur*), a species of yeast (a type of fungus) that is naturally found on the scalp & skin surfaces of humans.



The results indicates that when pH is ≥ 6 , it doesn't significantly affect the antifungal ability (IC99) of both Everguard CY and Benchmark. However, at pH < 6 , better antifungal effects are seen. Under similar conditions, CY requires a lower dosage than the benchmark, showing its stronger inhibition against *M.furfur* growth.

Due to capryloyl glycine's limited solubility in the test medium, take 20% inhibition (IC20) on *M. furfur* as an example, CY still requires a lower dosage than the Benchmark, demonstrating its stronger inhibitory effect against *M. furfur* growth.

EverGuard™ CY can be applied in dermatological conditions caused by *M.furfur* infections, such as: seborrheic dermatitis, dandruff, malassezia folliculitis and etc.

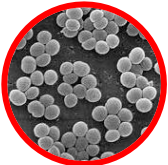

Potential Usages of EverGuard™ CY (Capryloyl Glycine) in Cosmetics

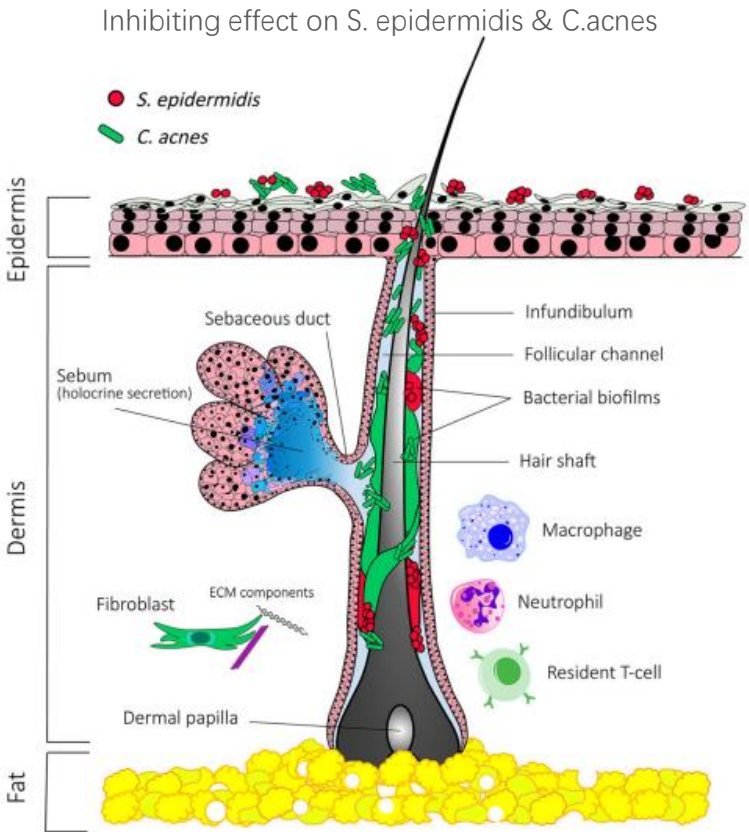


For Skin: Inhibit growth of Cutibacterium acnes & Staphylococcus epidermidis (Anti-acne & Maitain Skin Flora)

Skin organization and representation of the pilosebaceous unit. Major residents of the pilosebaceous unit, *C. acnes* and *S. epidermidis*, coexist on the skin surface and within the follicle as multiphyletic communities that can interact and coexist.

EverGuard™ CY: reduce skin acne caused by the proliferation of lipophilic bacteria and the resulting skin irritation and inflammatory damage, which is beneficial for maintaining the skin surface microecology.

MIC (%)		
	<i>S. epidermidis</i>	<i>C. acnes</i>
EverGuard™ CY	0.0625	0.0312

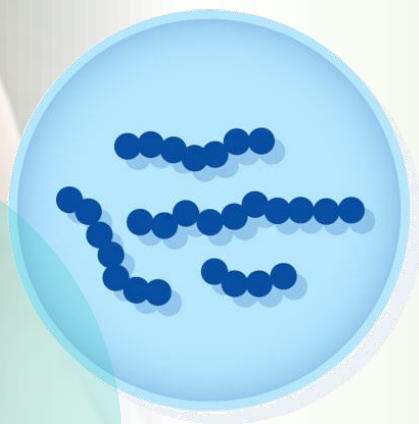


Potential Usages of EverGuard™ CY (Capryloyl Glycine) in Cosmetics



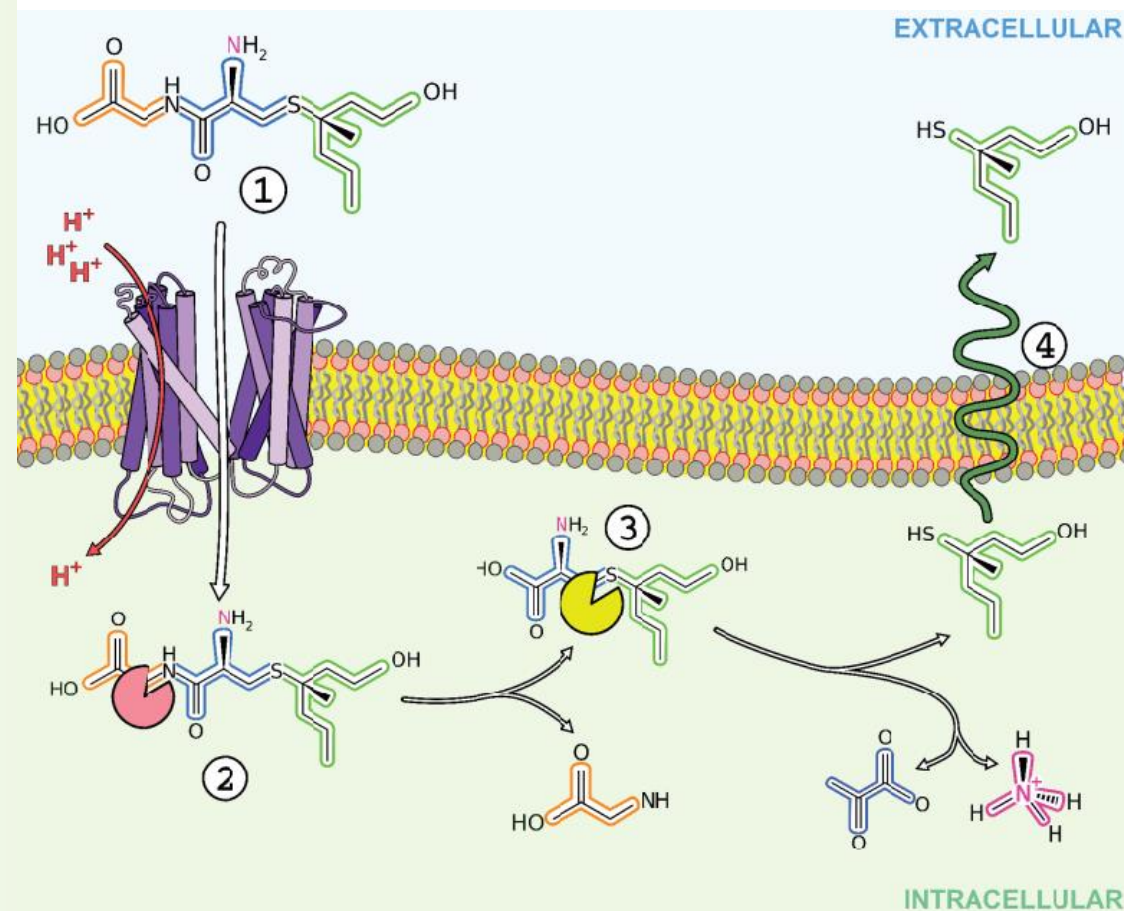
Alleviating undesirable odor

MIC 0.0625%
EverGuard™ CY
on
Micrococcus luteus
(*M. luteus*)



Overview of transport and intracellular biotransformation of malodour precursor molecule in bacteria.

Removal of the glycine by a dipeptidase and then the lyase reaction that cleaves the carbon-sulphur bond to release pyruvate and ammonia in addition to **volatile thiol (3M3SH)**

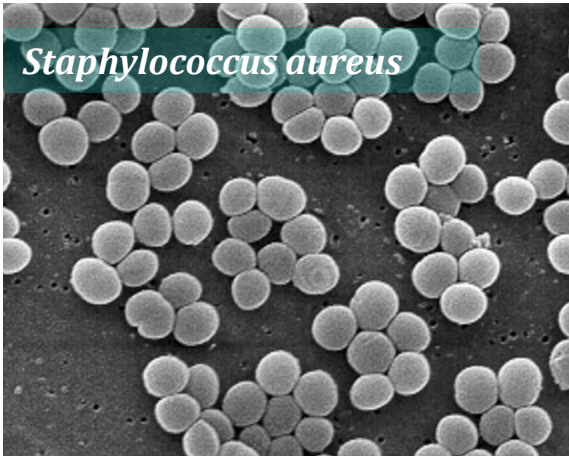
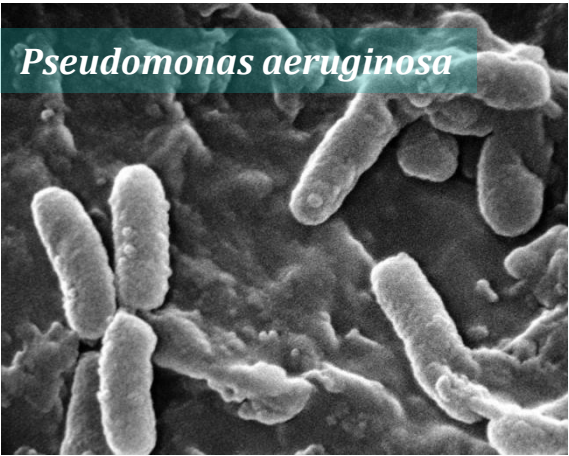
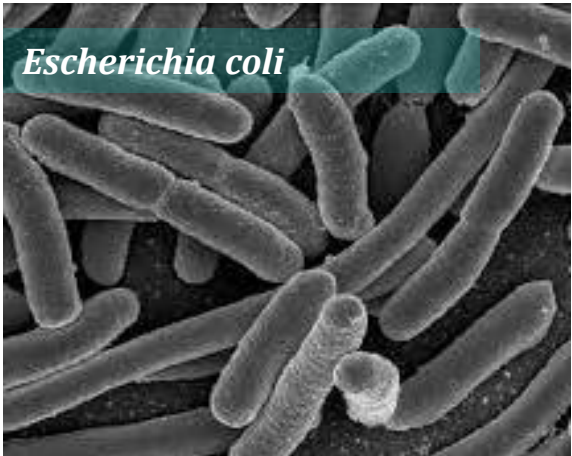


Potential Usages of EverGuard™ CY (Capryloyl Glycine) in Cosmetics



EverGuard™ CY: Antimicrobial Properties

Escherichia coli (E. coli)	Pseudomonas aeruginosa (P. aeruginosa)	Staphylococcus aureus (S. aureus)	Candida albicans (C. albicans)
0.25%	0.25%	0.13%	0.25%



Potential Usages of EverGuard™ CY (Capryloyl Glycine) in Cosmetics



Creams containing CY boost antimicrobial performance

Tested formulation (O/W emulsifier system):

	Ingredient	Supplier/INCI	#1	#2	#3	#4	#5
A	Water		75.43	75.05	74.1	73.15	72.2
	Glycerin		6.0	6.0	6.0	6.0	6.0
	CG-T		0.2	0.2	0.2	0.2	0.2
	Olivem® 1000	Hallstar/ Cetearyl Olivatate (and) Sorbitan Olivatate	0.8	0.8	0.8	0.8	0.8
B	SP CITHROL GMS 30 SE	Croda/ Glycerol monostearate	0.5	0.5	0.5	0.5	0.5
	Caprylic/Capric Triglyceride		3.0	3.0	3.0	3.0	3.0
	Cetearyl Alcohol		1.0	1.0	1.0	1.0	1.0
	Dimethicone		1.0	1.0	1.0	1.0	1.0
C	SEPIPLUS™ 400	Seppic/ Polyacrylate-13 (and) Polyisobutene (and) Polysorbate 20	0.8	0.8	0.8	0.8	0.8
D	Butylene glycol		5.0	5.0	5.0	5.0	5.0
	Evermild™ L-ARG	SINO LION/ Arginine	0.27	0.45	0.90	1.35	1.80
	Water		5.0	5.0	5.0	5.0	5.0
	Everguard™ CY	SINO LION/ Capryloyl Glycine	0.3	0.5	1.0	1.5	2.0
E	Phenoxyethanol		0.6	0.6	0.6	0.6	0.6
	EverMild™EHG	SINO LION/ Ethylhexylglycerin	0.1	0.1	0.1	0.1	0.1
pH:			5.39	5.16	5.53	5.2	5.21

Potential Usages of EverGuard™ CY (Capryloyl Glycine) in Cosmetics



Creams containing CY boost antimicrobial performance

In tested formulations containing CY, a concentration of 0.3% CY exhibits a certain level of antibacterial boosting activity, at 0.5% the boosting effect becomes more pronounced, and at 1.0% and above, the boosting efficacy reaches its peak.

Prototype Sample		#1 (CY 0.3%)		#2 (CY 0.5%)		#3 (CY 1.0%)		#4 (CY 1.5%)		#5 (CY 2.0%)	
Concentration/%		Initial Prototype		Initial Prototype		Initial Prototype		Initial Prototype		Initial Prototype	
Duration of action/min		10		10		10		10		10	
Test strains, inhibition rate, effectiveness evaluation criteria	ATCC:6538 (S.aureus)	44.44%	No apparent inhibition	86.54%	Product exhibits moderate antibacterial activity of 50%-90%	69.49%	≥Product exhibits moderate antibacterial activity of 50%-90%	94.23%	Product exhibits strong antibacterial activity of ≥90%	98.46%	Product exhibits strong antibacterial activity of ≥90%
	ATCC:8739 (E.coli)	99.29%	Product exhibits strong antibacterial activity of ≥90%	100.00%	Product exhibits strong antibacterial activity of ≥90%	100.00%	Product exhibits strong antibacterial activity of ≥90%	100.00%	Product exhibits strong antibacterial activity of ≥90%	100.00%	Product exhibits strong antibacterial activity of ≥90%
	ATCC:9027 (P. aeruginosa)	46.75%	No apparent inhibition	97.93%	Product exhibits strong antibacterial activity of ≥90%	100.00%	Product exhibits strong antibacterial activity of ≥90%	100.00%	Product exhibits strong antibacterial activity of ≥90%	100.00%	Product exhibits strong antibacterial activity of ≥90%
	ATCC:10231 (C.albicans)	57.75%	Product exhibits moderate antibacterial activity of 50%-90%	89.46%	Product exhibits moderate antibacterial activity of 50%-90%	91.09%	Product exhibits strong antibacterial activity of ≥90%	59.18%	Product exhibits moderate antibacterial activity of 50%-90%	89.29%	Product exhibits moderate antibacterial activity of 50%-90%

Standard: QB/T 2738-2012 Test methods for evaluating daily chemical products in antimicrobial and bacteriostatic efficacy.

Commercial Products Containing Capryloyl Glycine



Oil Controlling:



Kiehl's Oil Eliminator
Toner For Men
Refreshing shine control toner for men.



Vichy Normaderm
Phytosolution Mattifying Mist
Facial mist for acne-prone skin.



Bioderma Sébium Lotion
*anti-imperfection lotion for combination and oily skin, safe for sensitive skin. Moisture, sebum and **pH rebalancing** product. Limits blemishes for radiant skin.*



SEPHORA COLLECTION
Clear Skin Days Mattifying Booster Powder
A natural, oat-based powder that provides up to 12 hours of shine reduction and calms skin in as little as one day.



e.l.f. Matte Putty Primer
*Infused with Kaolin and White Charcoal to **absorb excess oil** for a shine-free finish.*

Commercial Products Containing Capryloyl Glycine



Anti-acne:



Dermies
Clear Me Acne Hydrating Gel
Gel specially formulated to help maintain hydration while treating acne prone skin.



La Roche-Posay
Effaclar Clarifying Solution Acne Toner With Salicylic Acid

CLARIFYING SOLUTION: This exfoliating acne toner with salicylic acid and glycolic acid helps remove pore-clogging debris and smooth skin texture. Removes excess dirt and dead skin cells to leave skin feeling refreshed and even.



e'clat superior
Acne Edit – Acne Cleansing Face Wash
Acne cleansing face wash



Bright Diary
Acne Serum
Serum for acne



BFFECT 0.5% Azeclair + 0.5% Kopnol - Acne Scar Removal Serum
Contains 0.5% hexyl resorcinol and azaleic acid derivatives to regulate acne, lighten acne scars and improve skin brightness.

Commercial Products Containing Capryloyl Glycine



Anti-dandruff:



La Roche-Posay Kerium Ds **Anti-Dandruff** Intensive Shampoo

Anti-dandruff and 4 weeks anti-relapse intensive treating purifying gel-shampoo. Its specific ultra fine micronized texture allows a more targeted and even application. Enriched with micro-exfoliating LHA™ with salicylic acid.



La Roche-Posay Kerium **Anti-Dandruff** Gel Shampoo

Anti-dandruff purifying gel-shampoo enriched with Zinc and micro-exfoliating LHA™ for a targeted action. Visibly and durably eliminates dandruff and prevents their reappearance. Rebalances scalp for less oiliness. Reduces itchiness.



La Roche-Posay Kerium Caspa Grasa Shampoo for **oily hair**.



Eucerin Dermo Capillaire **Anti-dandruff** Gel Shampoo Anti dandruff shampoo.



Children

Bioderma ABCDerm **Gentle Shampoo** Specifically formulated in accordance with ABCDerm dermatological safety commitment, to gently wash **children's delicate scalps**.

Commercial Products Containing Capryloyl Glycine



Other applications (microbiome, odor removal, repairing/restoration, etc.):



Lupin 5h Microbio Serum

Stimulactal supports the development of a healthy microbiome. It inhibits the growth of inflammatory bacteria, relieves itching and supports the development of an intact skin barrier.



Nuxe Men 24HR Protection Deodorant

This deodorant provides 24 hour protection. Anti-fingerprint, anti-stain. Woody and spicy masculine scent.



EltaMD

Uv Aero Broad-Spectrum Spf 45

Eltamd uv aero provides sheer but sure sun protection. This product has 9.3% transparent zinc oxide, is water-resistant (80 minutes), has uva/uvb sun protection and is fragrance-free, oil-free, paraben-free, sensitivity-free and noncomedogenic.



Shu Uemura

Porefinist2 Sakura Refreshing Cleansing Oil

New Porefinist2 cleansing oil removes makeup and deep cleans pores, while leaving the skin feeling hydrated and refreshed, preparing it to fully enjoy makeup. Incredibly lightweight cleansing oil that leaves the skin clean, fresh and refined.



Algotharm

Algotime Expert Youth Wrinkle Cream

Algotharm Algotime Expert Youth Wrinkle Cream 50ml with silky texture and powdered fragrance moisturizes and smoothes the appearance of wrinkles for a denser skin. It reduces the appearance of pigment marks and evens the complexion that becomes radiant.



Nuxe

Contour Des Yeux Prodigeux Anti-Fatigue Moisturizing Eye Cream

It reduces the appearance of puffiness and erases dark circles (plant caffeine).



SINO LION
Innovation behind Beauty & Elegance



Ascend



Spēs 诗裴丝®

The most popular shampoo among young generations!

功效型头部洗护品牌

Hair care brand with efficacy





Capryloyl glycine in skin's hypertrichosis: placebo-controlled clinical study

- Aims :** To investigate the effectiveness of **capryloyl glycine on hypertrichosis (HT)** through evaluating the potential **inhibition of ODC1 activity (hair removal for vellus hair)** by a cream (Product A) containing **4% capryloyl glycine**
- Methods :** The **ODC1 activity** was detected by measuring absorbance at 340 nm. In the presence of ODC1 inhibitors (DFMO), absorbance decreases as a function of inhibition. ODC1 activity inhibition was expressed as percentage of control (untreated sample).
- All data were presented as mean \pm standard deviation of three independent experiments. To determine if statistically significant differences between treatments were present, a t test analysis was performed. The differences between groups were considered significant at $p < 0.05$. Clinical efficacy was evaluated by means of macrophotography.
- Subjects:** **Twelve (12) Caucasian female adult patients (age:18-30),** with HT located on the **forearms**, were enrolled. The study cream (product A) was applied twice/day for four months on the right forearm.
- Samples and Usage:** Cream (product A) containing 4% capryloyl glycine and a placebo cream (product B) was applied **twice/day for four months** on the left forearm. Difluoromethylornithine (DFMO) was provided as an inhibitor control.
- Results :** The cream significantly inhibited ODC1 activity ($35.1 \pm 0.5\%$ inhibition, equivalent to a $64.9 \pm 0.5\%$ ODC1 activity). DFMO completely abolished the enzymatic activity ($100 \pm 5\%$ inhibition, equivalent to $0 \pm 5\%$ ODC1 activity). All patients were considered evaluable. In 11 out of 12 patients (91.7%), who were treated with product A, an improvement was observed. No improvement was observed in patients treated with product B. The global assessment showed good efficacy in 7 patients (58.3%) and moderate efficacy in 5 patients (41.7%) treated with the product A. No efficacy was detected in patients treated with product B.
- Conclusions :** The study cream showed to be effective in Caucasian, adult, female patients with hypertrichosis located on the forearms.



Capryloyl glycine (CY) in skin’s hypertrichosis: placebo-controlled clinical study

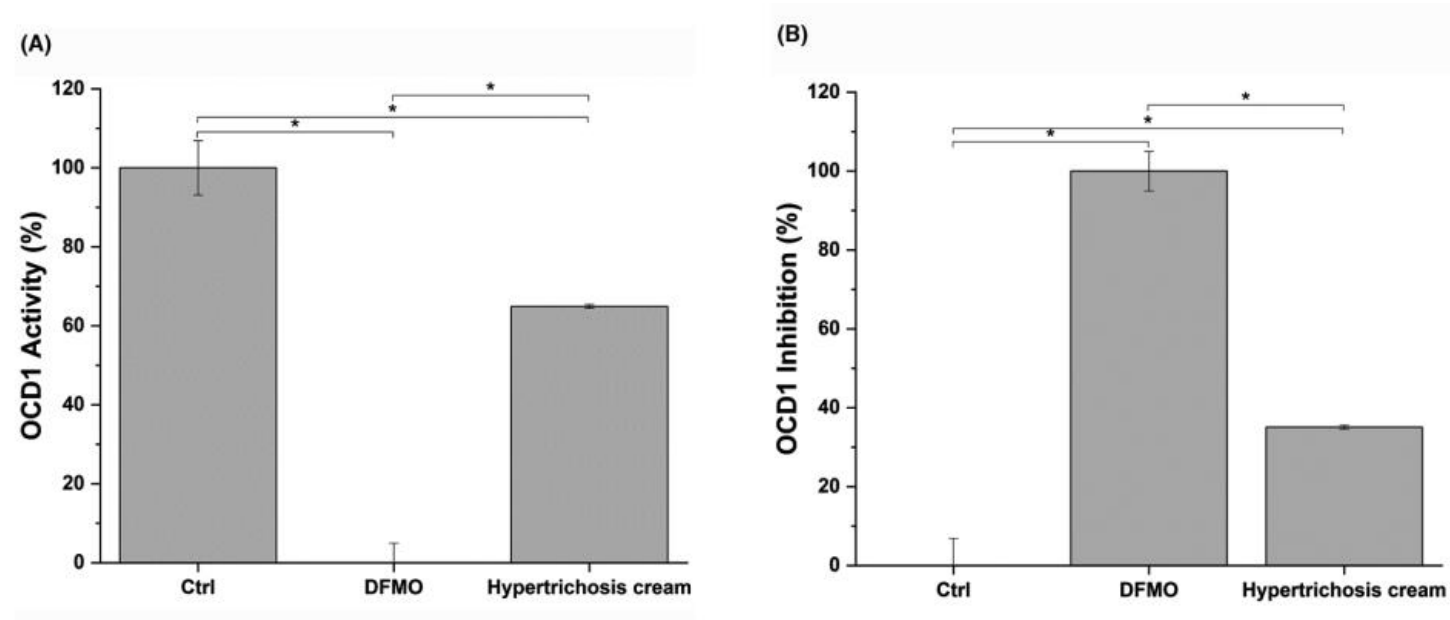


Table 1: ODC1 activity and inhibition by the study cream

	ODC1 Activity (%)	ODC1 Inhibition (%)
Ctrl	100 ± 6.9	0 ± 6.9
DFMO	0 ± 5	100 ± 5
Study cream	64.9 ± 0.5	35.1 ± 0.5

Ctrl: Control (untreated); DFMO: positive control. Results are presented as mean ± standard deviation.

Barbareschi M, Benetti F, Gaio E, Angileri L, Veraldi S. Cosmet Dermatol. 2021 Apr;20 Suppl 1(Suppl 1):18-22.

Figure 1: ODC1 (A) and inhibition (B) by the study cream. Ctrl:Control (untreated); DFMO: positive control; *p < 0.05

The tested cream (with 4% CY) significantly inhibited ODC1 activity ($35.1 \pm 0.5\%$ reduction, equivalent to a $64.9 \pm 0.5\%$ ODC1 activity). DFMO completely abolished the enzymatic activity ($100 \pm 5\%$ inhibition, equivalent to $0 \pm 5\%$ ODC1 activity) (Figure 1; Table 1).

Capryloyl glycine (CY) showed its potential usage in hypertrichosis without any adverse reaction.



Capryloyl glycine (CY) in skin's hypertrichosis: placebo-controlled clinical study (Typical subject photos)

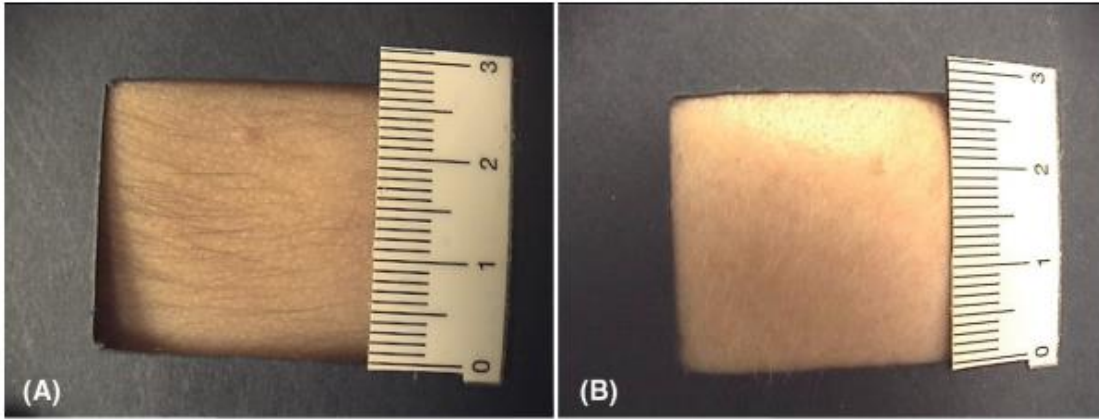


Figure 2: Patient 1. (A) Before the beginning of the study and (B) Four months later

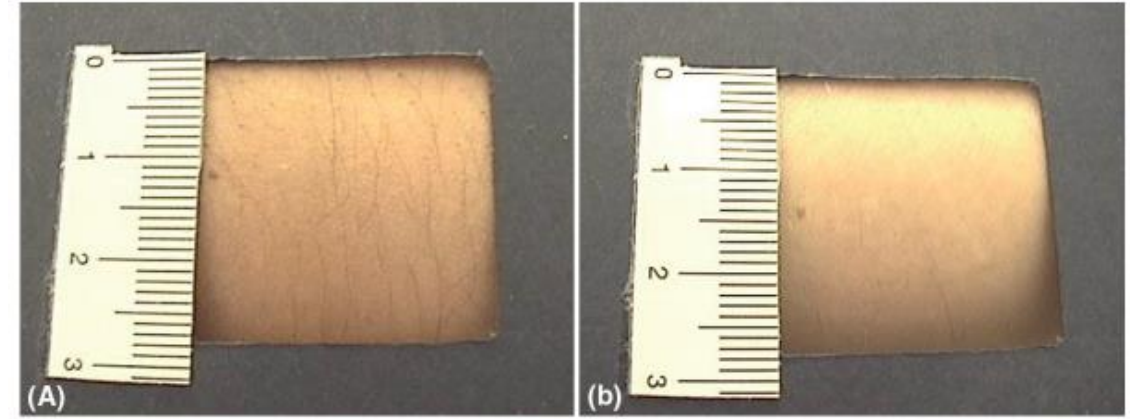


Figure 3: Patient 3. (A) Before the beginning of the study and (B) Four months later

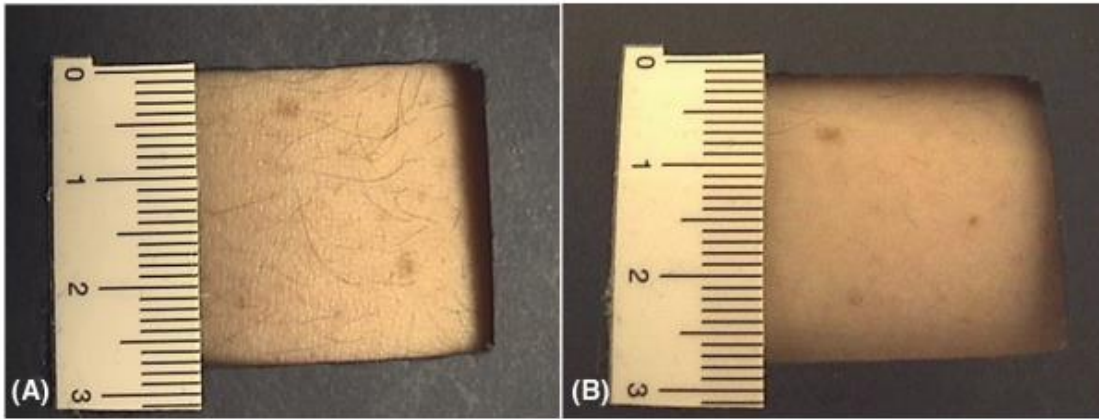


Figure 4: Patient 4. (A) Before the beginning of the study and (B) Four months later

All patients were considered evaluable. No laboratory or instrumental abnormalities were observed. In 11 out of 12 patients (91.7%), who were treated with product A, improvement (=2) was observed (Figures 2-4). No improvement was observed in patients treated with product B. The global assessment showed the following results: good efficacy (=2) in 7 patients (58.3%) and moderate efficacy (=1) in 5 patients (41.7%) treated with the product A. No efficacy was detected in patients treated with product B. Cosmetic acceptability was judged as good (=3) by all patients. No adverse events were reported or observed in both groups of patients.

Capryloyl glycine (CY) showed its potential usage in hypertrichosis without any adverse reaction.



Potential Usage of Capryloyl glycine (CY) in hair (vellus hair) removal products



Acquired HT (Hypertrichosis) may be caused by/associated with:

- Malnutrition, anorexia, hormonal diseases, polycystic ovary syndrome, porphyrias, and neoplasms.
- Drugs (minoxidil, cyclosporine, phenytoin).

The simplest Methods

- ❑ Bleaching
- ❑ Trimming
- ❑ Shaving
- ❑ Depilatory products

- Remove hair at the level of the skin surface
- Duration: two weeks

Epilation methods

- ❑ Plucking
- ❑ Waxing
- ❑ Electrosurgical epilation

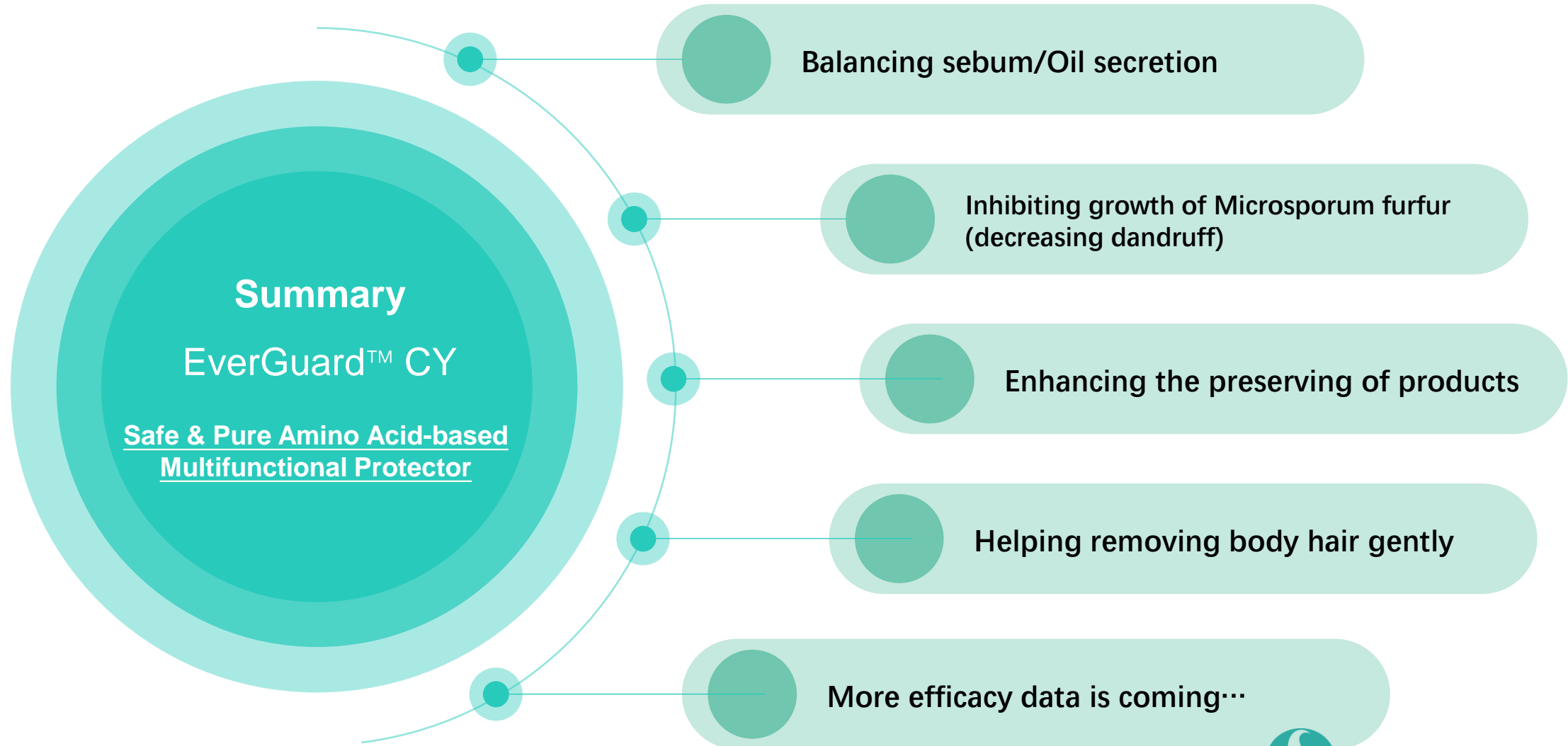
- Remove hair from deeper levels
- Duration: four weeks

Permanent hair removal Methods

- ❑ Lasers & intense pulse light (IPL)

- Effective only in patients with pigmented hair
- Ineffective in patients with fair hair
- Expensive.

Potential Usages of Capryloyl Glycine in Cosmetics



User Guide of EverGuard™ CY (Capryloyl Glycine) in Cosmetics



EverGuard™ CY, 100% NOI & COSMOS Compliant

Solubility:

Diols and polyols soluble, water soluble (neutralization is suggested), oil soluble (Evertouch™ LPS-100 is recommended).

Dosage:

0.1-1.0% at pH \geq 5.0, adjustable in different systems.

1.0-2.0% at pH \geq 6.0, adjustable in different systems.

2%-5.0% at pH \geq 7.0, adjustable in different systems.

Processing:

High temperature resistant, suitable for high-temperature processes (90°C).



More info of dosage

- No Limitation (EU)
- 0.05-2.0% (USA)
- \leq 5.0% (China)

Functions

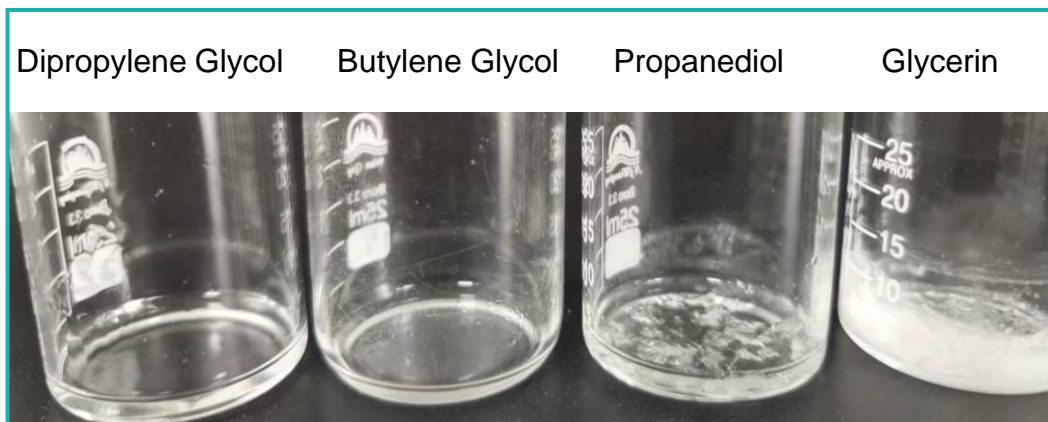
Antimicrobial Enhance,
enhance antiseptic effects
Anti-seborrheic (anti-dandruff)
Anti-subum (oil-control, anti-acne)
Deodorant
Hair conditioning
Surfactant (cleansing)

User Guide of EverGuard™ CY (Capryloyl Glycine) in Cosmetics



The Solubility of EverGuard™ CY in Diols

Prepare a mixture of diols and capryloyl glycine in a ratio of 5:1 (diol: CY). Heat the mixture and then allow it to cool down to room temperature.



It is observed that EverGuard™ CY is more soluble in alcohols with longer carbon chains, while it has poorer solubility in glycerin and propylene glycol.



When using butylene glycol to dissolve EverGuard™ CY, it is recommended to maintain a ratio below 5.0:1.5 (with the objective of ensuring system transparency, meaning that the amount of Capryloyl Glycine should not exceed 2.3% of the total mixture).



The Solubility of EverGuard™ CY in Water

CY%	1.0%	1.0%	1.0%	5.0%
pH	3.0	<div>neutralization →</div> 4.67	5.34	5.34

CY dissolved in water, pH=3.0, acidic system, need neutralization to dissolve CY.

Recommended dissolving method:
First, dissolve EverGuard™ CY (Capryloyl Glycine) in butylene glycol,
Then, add an alkali (such as NaOH, L-ARG, Tromethamine and etc.) for neutralization.
Finally, add the above mixture to the aqueous phase and gently heat until dissolved.

User Guide of EverGuard™ CY (Capryloyl Glycine) in Cosmetics



Recommended alkali dosage for the dissolution (neutralization) of EverGuard™ CY (Capryloyl Glycine) in water

Method: Add 0.1g of CY (Capryloyl Glycine) to 0.5g of BG (Butylene Glycol), and then add water to a total mass of 10g.

Alkali dosage for dissolving 0.1g EverGuard™ CY	pH=4.6	pH=6.0
10% NaOH solution	0.186 (pH4.61)	0.213 (pH6.00)
10% Tromethamine solution	0.552 (pH4.68)	0.607 (pH5.96)
10% Evermild™ L-ARG solution	0.824 (pH4.60)	0.901 (pH6.26)

Validation Experiment (using 10% NaOH as a neutralizing agent):

Weigh 0.15g of CY and 0.5g of BG, and heat the mixture to dissolve the components and then let it cool down.

Add 0.308g of 10% NaOH solution to the mixture.

Add water to make a total mass of 10g. Gentle heating can be applied to aid dissolution and measure the pH of the solution and record the value as pH=5.65.

* Note: The pH value in parentheses is actual pH

Based on above testing data, the approximate range of alkaline dosage for neutralization (pH=6.0) of different types is as follows:

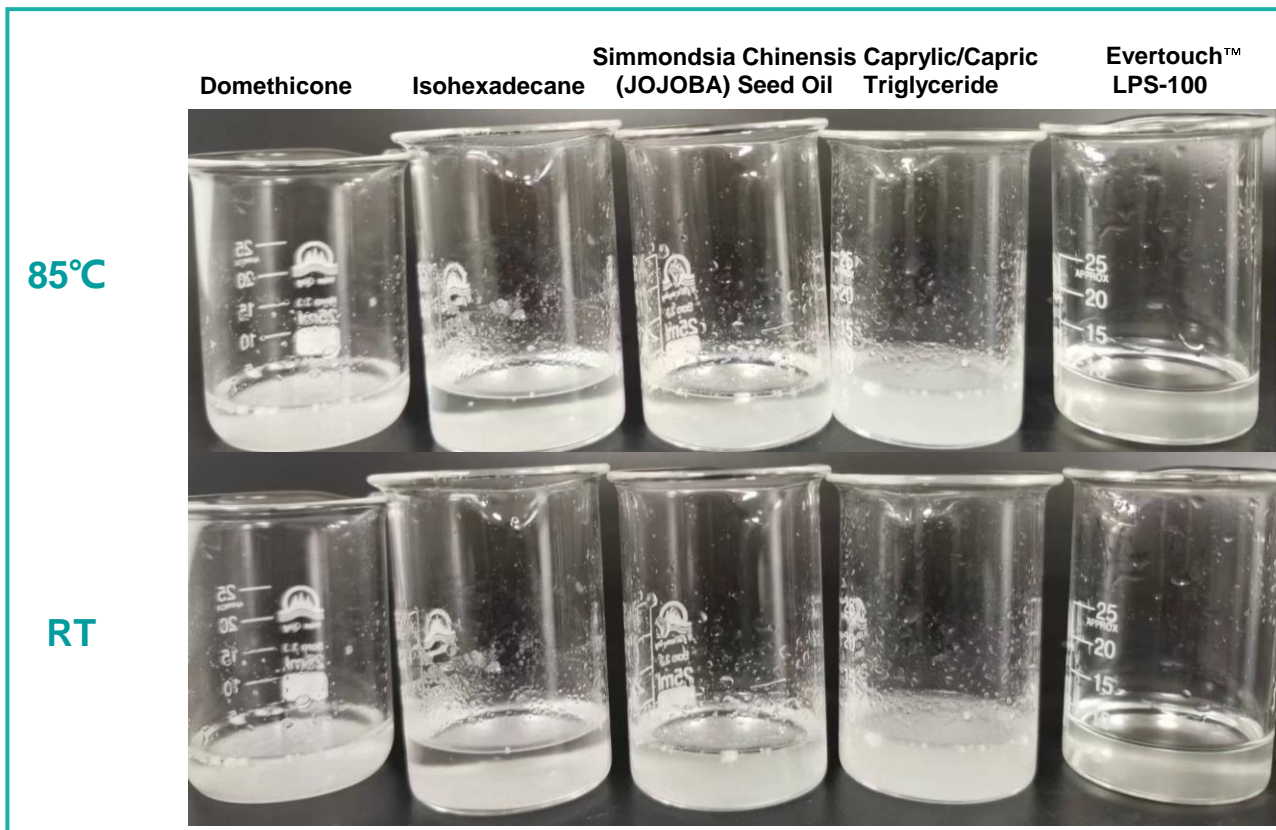
CY: NaOH = 5:1; CY: Tromethamine = 5:3; CY: L-ARG (Arginine) = 10:9

However, it is important to note that the actual alkaline dosage may vary depending on the specific requirements and pH targets of various formulation. Suggested adjustments can be made based on the actual pH measurements during the process.

User Guide of EverGuard™ CY (Capryloyl Glycine) in Cosmetics



The Solubility of EverGuard™ CY in Oils



- CY is soluble in LPS-100 and insoluble in other non-polar oils such as silicone oil and alkanes.
- CY does not dissolve in vegetable oils and triglycerides.

Considering the acidic nature of CY, it is advisable to first dissolve it in the aqueous phase and then adjust the pH for homogenization, to prevent any disruption on viscosity after adding thickeners to the system later on.

User Guide of EverGuard™ CY (Capryloyl Glycine) in Cosmetics



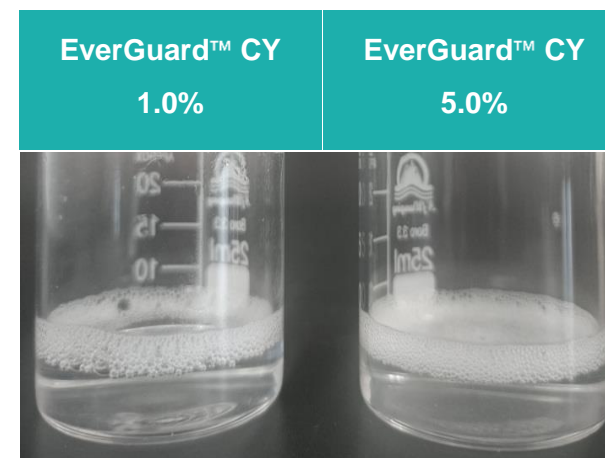
Application of EverGuard™ CY in Cleaning Foam: Solubility

EverGuard™ CY can be added to a facial cleanser formulation at a concentration of 1.0-5.0%. It is capable of dissolving and maintaining clarity and transparency even at low temperatures (5°C) for 24 hours without precipitation.

Trade Name/INCI Name	w/w%
Water	to100
Eversoft™ ACS	20
Glycerin	10
Plantacare® 2000 UP	5
椰油基甜菜碱	12
Phenoxyethanol	0.7
EverGuard™ CY	0~5

In the tested formulation, the addition of different amounts of EverGuard™ CY leads to changes in the pH of the formulation:

- **Formulation with 0% CY: pH = 9.44**
- **Formulation with 1% CY: pH = 5.71**
- **Formulation with 5% CY: pH = 4.61**



CY and Alaninate-based surfactant are compatible in a facial foam system. It does not affect the appearance of cleansing foam.

When using CY in combination with Glycinate-based surfactant, it is recommended to maintain the pH of the system in a weak alkaline range to ensure clarity.

User Guide of EverGuard™ CY (Capryloyl Glycine) in Cosmetics



Formulation Example #1: Amino acid Balancing and Anti-Hair Loss Shampoo

	Ingredient	w/w %	Supplier/INCI Name	Function
A	Deionized Water	To 100		Diluent
	Evermild® GLDA-30	0.40	Sino Lion/ Tetrasodium Glutamate Diacetate	Chelating Agent
	Eversoft® ACS-30S	30.00	Sino Lion/ Sodium Cocoyl Alaninate	Mild Surfactant
	Thickmate® A	18.00	Sino Lion/ Mild Surfactant (Patent)	Thickening Agent Co-surfactant
	Cocamidopropyl Betaine	10.00		Foam Booster
	EverSoft® TCS-30S	8.00	Sino Lion/Sodium Methylcocoyl Taurine	Mild Surfactant
	Dipotassium Glycyrrhizate	0.03		Conditioning Agent
B	Polyquaternium-6	1.00		Conditioning Agent
	Glyceryl caprylate/caprate	0.40		Conditioning Agent
	EverFrag™ LAD-5G	0.10	Sino Lion/ Encapsulated Fragrance (Patent)	Conditioning Agent
	ProScalp™ CAD	1.20	Sino Lion/ Sodium Cocamidopropyl PG-Dimonium Chloride Phosphate, Dichlorobenzyl Alcohol, Hexamidine Diisethionate, Water (Patent-pending)	Conditioning Agent
C	BioEase™ MY-75(N)	1.00	Sino Lion/ Water, Hydrolyzed corn starch	Humectant
	EverExtract™ PO	0.50	Sino Lion/ Portulaca Oleracea Extract	Conditioning Agent
	EverGuard™ CY	0.50	Sino Lion/ Capryloyl Glycine	Conditioning Agent
	Evermild™ L-ARG	1.00	Sino Lion/ Arginine	Humectant
D	Everguard® LAE-20	1.50	Sino Lion/ Ethyl Lauroyl Arginate HCl, Glycerin	Preservative
E	Fragrance	0.40		
F	50% Citric Acid	0.87		pH Adjuster

Description: This silicon-free and sulfate-free shampoo showcases the amazing benefits of Sino Lion's Self-thickening Technology. The use of Alaninate in combination with Thickmate™ A makes it incredibly easy to achieve the desired viscosity and thickness. In this formulation, Alaninate acts as the gentle primary surfactant, creating a rich and creamy foam that leaves your hair feeling clean, smooth, and fluffy. Besides, owing to the active complex-CAD, CY and L-ARG, it also be helpful in prevent hair loss through inhibiting Inhibit the proliferation of the lipophilic microorganism (Malassezia furfur and etc.) and enhancing the functions of hair follicles.

Procedure

1. Add ingredients in Phase A one by one while stirring until uniform.
2. Add Phase B one by one while stirring until uniform.
3. Add Phase C, D, and E one by one slowly while stirring until uniform.
4. Add Phase F to adjust pH value to about 6.0-6.3.

Properties

Appearance: Clear Viscosity Fluid
Viscosity: 5720 mPa.s (25°C, Brookfield RVT, 20rpm, 4#spindle)
pH (25°C): 6.24



User Guide of EverGuard™ CY (Capryloyl Glycine) in Cosmetics



Formulation Example #2: Anti-acne Glycinate Cleansing Paste

	Ingredient	w/w%	Supplier/INCI Name	Function
A	Water	To 100		Solvent
	Glycerin	29.00		Humectant
	EverMild® GLDA-30	0.40	Sino Lion/ Tetrasodium Glutamate Diacetate	Chelating Agent
	Zemea® Propanediol	2.00	Dupont/ Propanediol	Humectant
	EverSoft® YCS-30S	51.00	Sino Lion/ Sodium Cocoyl Glycinate	Mild Surfactant
	Salacos PGMSV	0.60	Cosfa/ Polyglyceryl-10 Stearate	Emulsifier
	Glucamate DOE120	1.00	Lubrizol/ PEG-120 Methyl Glucose Dioleate	Thickener
	Glycol Distearate	0.50		Pearlescent Agent
	EverSoft® UCS-40S	4.00	Sino Lion/ Disodium Cocoyl Glutamate	Surfactant
	EverMild™ SB450	5.00	Sino Lion/ lauramidopropyl hydroxysulfobetaine	Surfactant
B	Citric Acid (50%)	2.50		pH Adjuster
C	EverGuard™ HP	0.40	Sino Lion/ Hydroxyacetophenone	Preservative
	Dipotassium Glycyrrhizate	0.10		Emollient
D	Sodium Benzoate	0.30		Preservative
	EverGuard® CY	0.20	Sino Lion/ Capryloyl Glycine	Skin Conditioner
E	Fragrance	0.05	Firmenich/Fragrance	Fragrance

Description: This creamy cleansing paste utilizes liquid form of amino acid-based surfactant-Sodium Cocoyl Glycinate (Eversoft® YCS-30S) as the primary surfactant, combining with ultra mild and gentle amino acid-based surfactant-Disodium Cocoyl Glutamate (Eversoft® UCS-40S) as co-surfactant. It incorporates Capryloyl Glycine-EverGuard® CY as an oil-controlling and anti-acne ingredient. The texture of this paste is neither too soft nor too hard, making it easy to dispense and spread evenly. It quickly generates a rich and abundant foam and provides a moderate level of cleansing, leaving a refreshing sensation without making the skin feel tight after use. Additionally, the pH level is mildly acidic, which is closer to the natural pH of the skin and makes it more gentle and friendly to the skin.

Procedure

1. Mix Phase A while stirring until uniform at 80~85°C;
2. Add phase B and stir evenly at 80~85°C;
3. Cool down to < 80°C, add C phase while stirring;
4. Cool down to < 70°C, add D phase while stirring;
5. Cool to room temperature, add phase E and stir well.

Properties

Appearance: White paste
Viscosity: 100,000±50,000 mPa.s (RT, Brookfield RVT, 20rpm, 95#spindle)
pH (25°C): 6.4~6.9

User Guide of EverGuard™ CY (Capryloyl Glycine) in Cosmetics



Formulation Example #3: Calming & Stress-relief Scalp Serum

	Ingredient	w/w %	Supplier/INCI Name	Function
A	Deionized Water	To 100		Diluent
	Evermild™ GLDA-30	0.10	Sino Lion/ Trisodium Dicarboxymethyl Alaninate	Chelating Agent
	Everguard™ HP	0.50	Sino Lion/ Hydroxyacetophenone	Preservative
	Evermild™ HG	0.60	Sino Lion/ 1,2-Hexanediol	Preservative
	Glycerin	4.00		Humectant
	Dipropylene Glycol	3.00		Humectant
	Butylene Glycol	4.00		Humectant
	Sodium PCA	1.00		
	Everguard™ CY	0.15	Sino Lion/ Capryloyl Glycine	Humectant
B	Evermild™ L-ARG	0.13	Sino Lion/ Arginine	Humectant
	EverMoist™ AGG-50G	1.00	Sino Lion/ Glyceryl Glucoside, Water, Glycerin, Hydroxyacetophenone, Ethylhexylglycerin, 1,2-Hexanediol	Humectant
	EverExtract™ PO	2.00	Sino Lion/ Portulaca Oleracea Extract	Anti-allergic
	BioEase™ MY-75(N)	0.50	Sino Lion/ Water, Hydrolyzed corn starch	Humectant
	EverLipid™ EFA	0.50	Sino Lion/ Linoleamidopropyl PG-Dimonium Chloride Phosphate	Emollient
	Everguard™ PL	0.05	Sino Lion/ Polyepsilon-lysine	Preservative
C	Deionized Water	5.00		Solvent
	PEG-40 Hydrogenated Castor Oil	2.13		Solubilizer
	Fragrance	0.03		
	KOKO™ ML Plus	0.50	Sino Lion/ Menthol & Menthyl Lactate	Cooling & Calming Agent

Description: This scalp serum is specially formulated to effectively combat dandruff, alleviate itching, soothe the scalp, and promote scalp health. Using Sino Lion's unique natural soothing and moisturizing agents-BioEase™ MY-75(N) & Evermoist™ AGG-50G, it treats the root causes of dry and sensitive scalp and deeply moisturizes and soothes the scalp, resulting in healthier and softer scalp. Besides, it can also help calming stressed scalp conditioning by using KOKO™ ML Plus.

Procedure

1. Mix Phase A with low-speed agitation and heat to 80-85°C;
2. Add Phase B into Phase A while mixing, and increase the agitation speed to homogenize for 10-15 minutes until uniform;
3. Add Phase C while mixing until uniform.

Properties

Appearance: Clear Fluid (after 3-5 days)
pH (25°C): 6.37





Questions or Comments?

Innovation Behind Beauty and Elegance

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www.sinolion.com

