



Exclusively Distributed By:

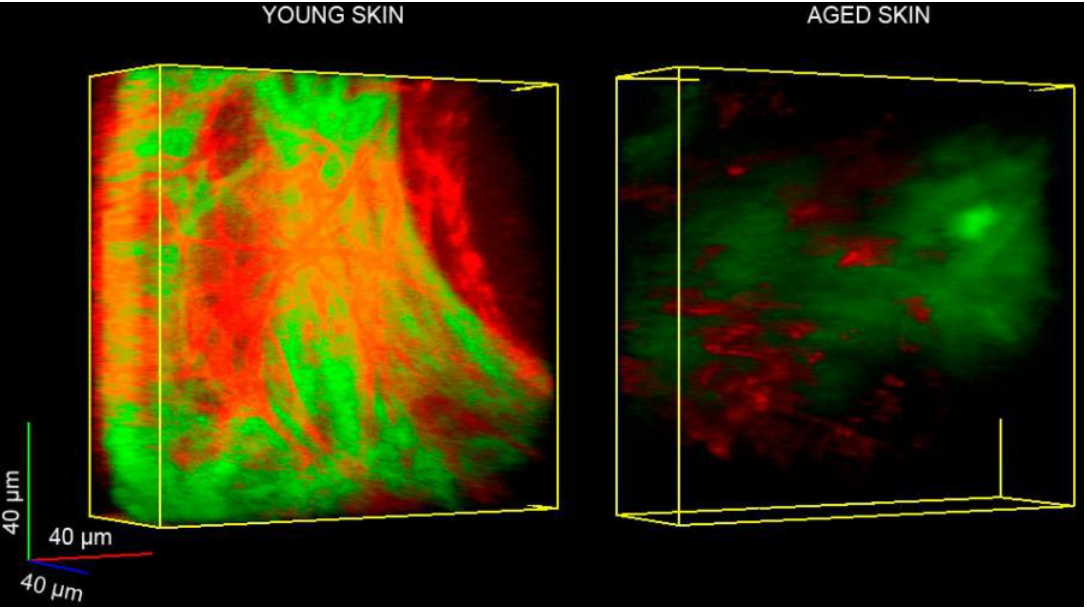
 Integrity Ingredients Corporation
"Your Innovation Partner"

www.integrityingredientscorp.com • info@integrityingredientscorp.com
(310) 782-0282

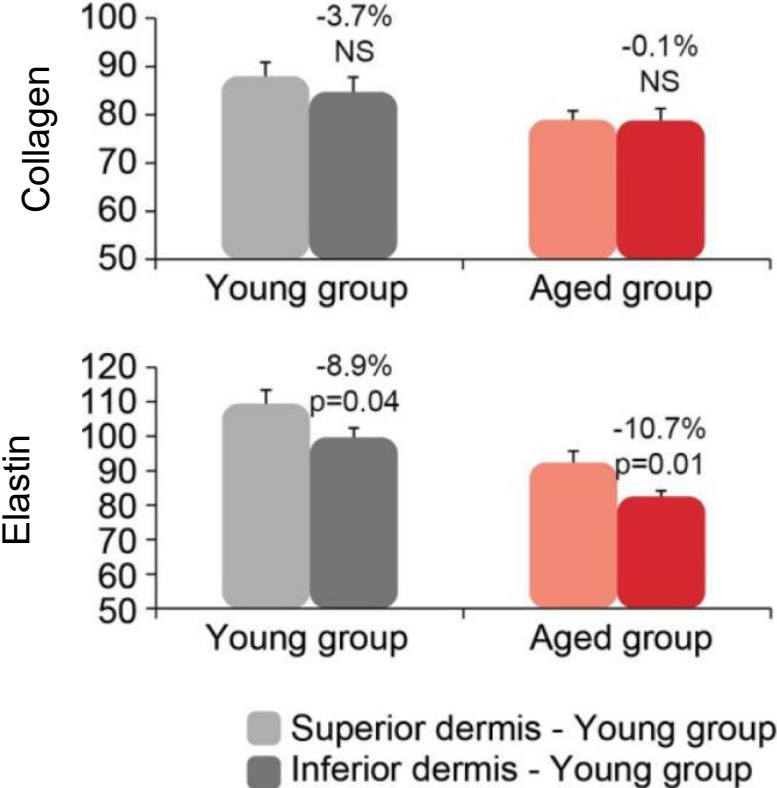
WrinFix-P3P1 (Palmitoyl tripeptide-1)

Readline® Skincare

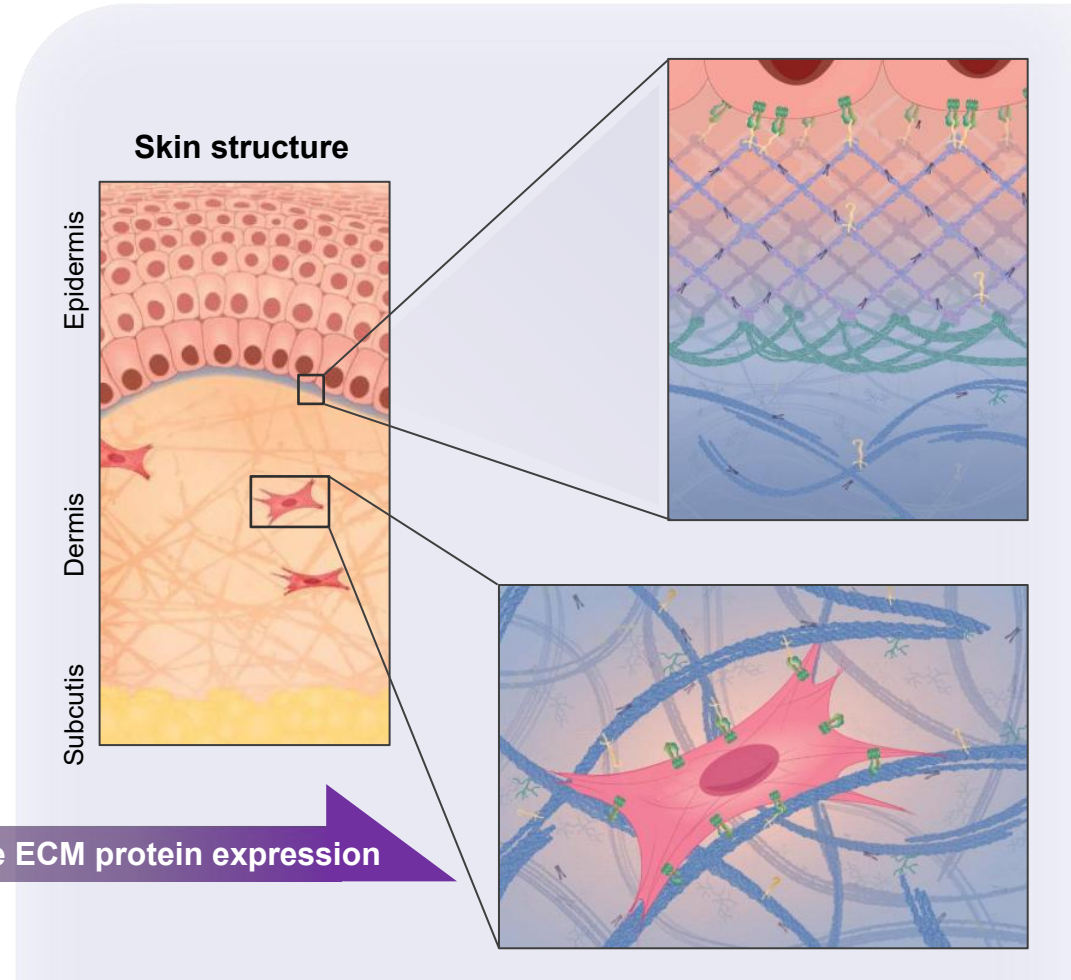
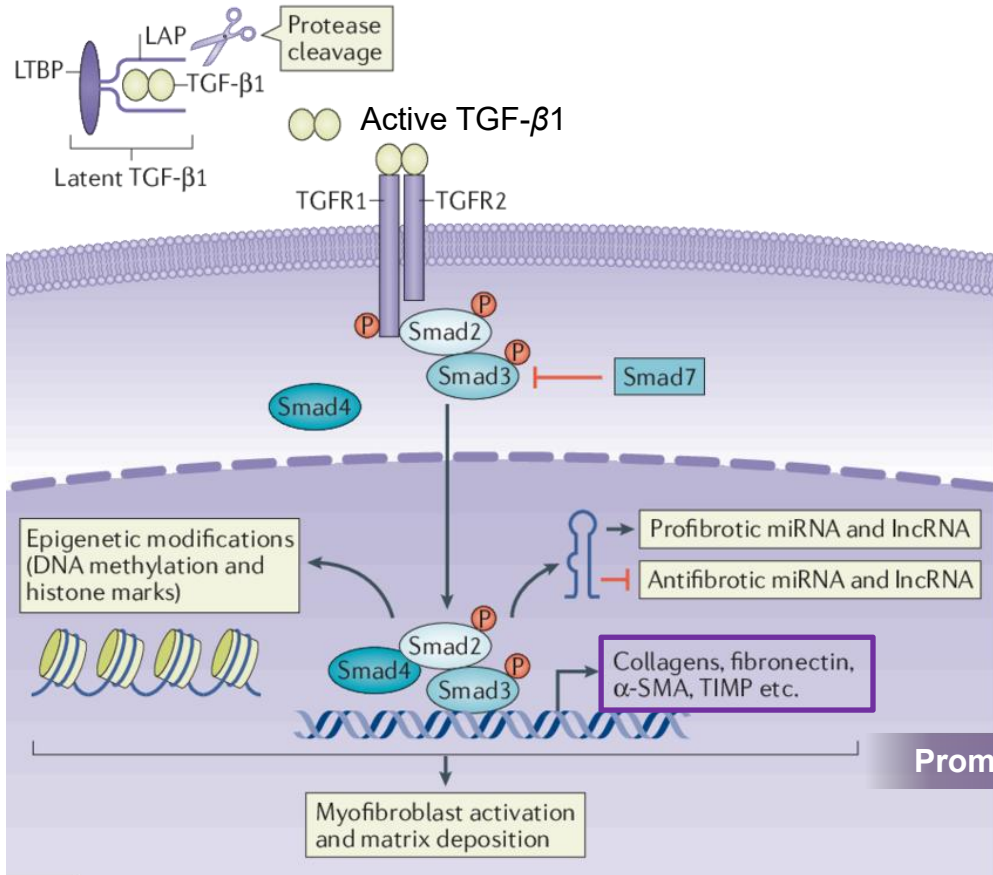
Collagen and elastin reduction in aging skin



Collagen: SHG-signal in green; Elastin: autofluorescence in red



The role of TGF- β in ECM protein synthesis



- Integrin
- Fibronectin
- GAG
- Collagen VII
- Collagen IV
- Collagen I
- Laminin
- HSPG

Key milestones in tripeptide-1 (GHK) discovery and research

◆ 1973 Discovery:

L. Pickart identified a tripeptide (Gly-His-Lys) in human serum that promotes mouse liver cell proliferation.

◆ 1973 Synthesis:

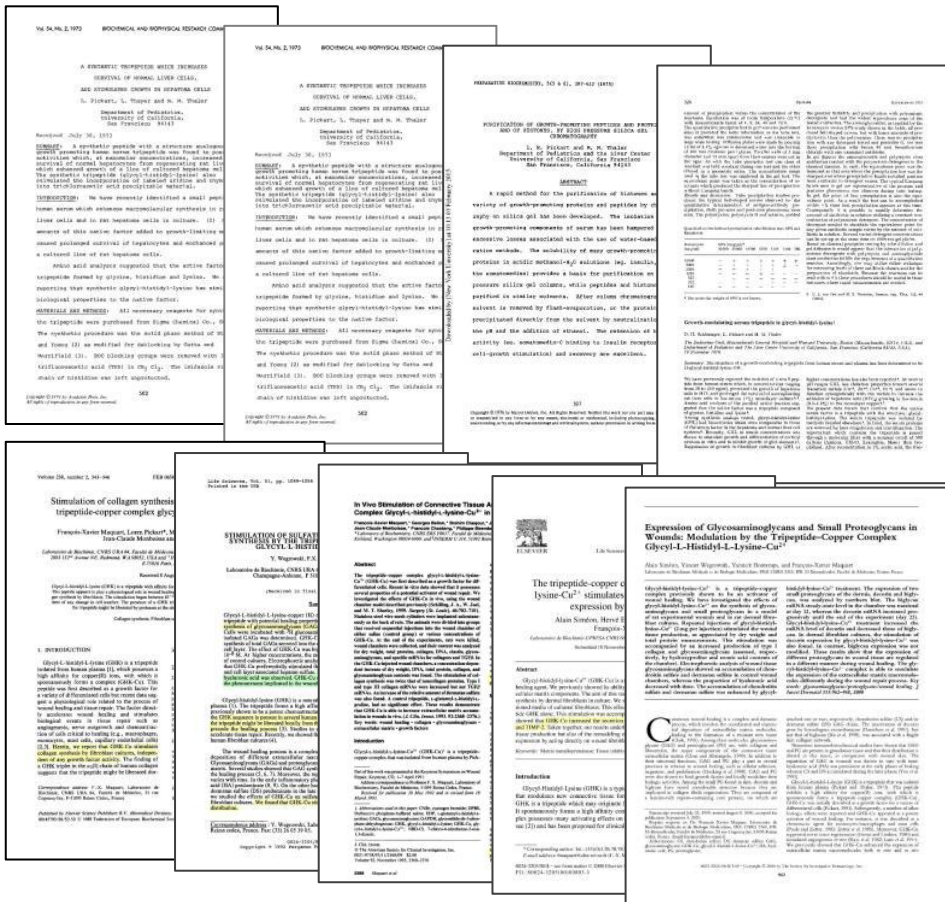
The tripeptide Gly-His-Lys was synthesized and shown to stimulate liver cell growth in mice.

◆ 1975 Purification:

A method for purifying this growth factor using silica gel chromatography was developed.

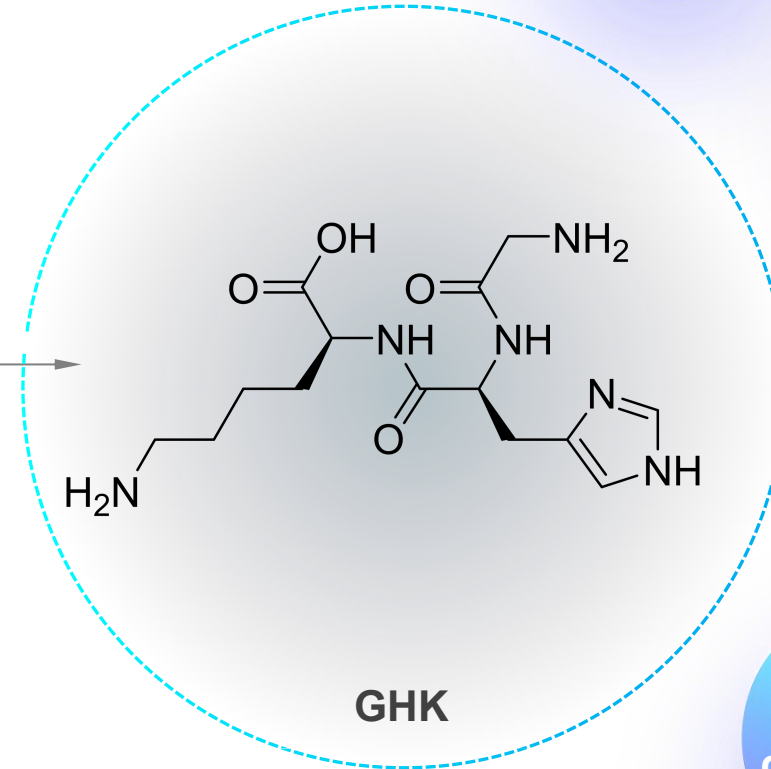
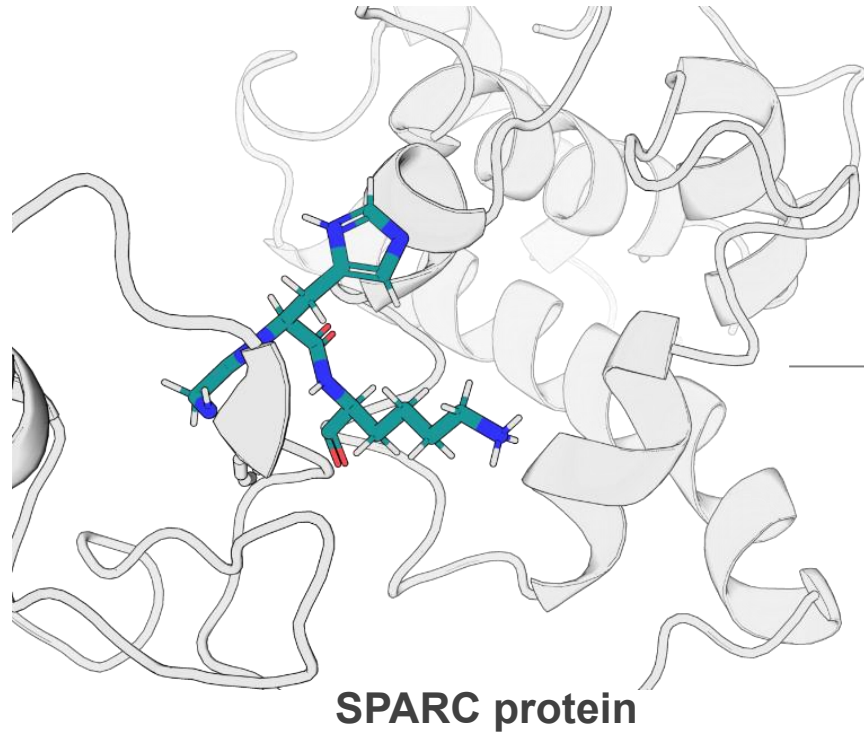
◆ 1977 Confirmation:

D. H. Schlesinger confirmed the growth factor in human serum is **Gly-His-Lys**.



Natural source of tripeptide-1:

Enzymatic fragment of SPARC protein



Promotes collagen synthesis via TGF- β

Antioxidant effect

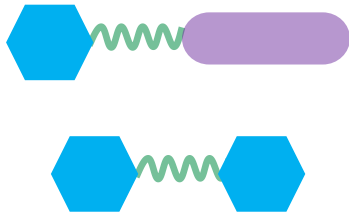
Accelerates wound healing

Increases skin density and thickness

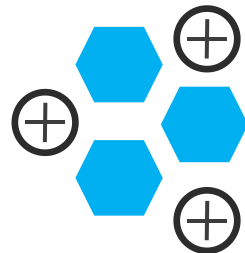
Palmitoyl modification enhances transdermal delivery

Methods of promoting osmolality

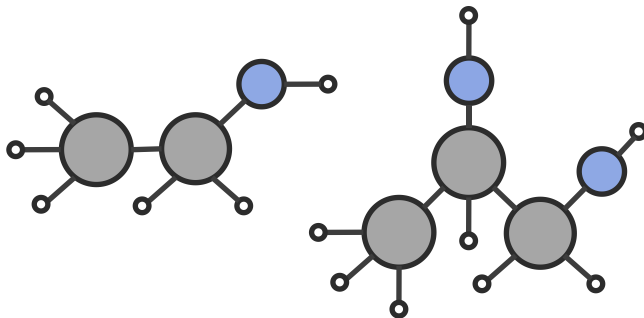
Chemical modification
(Palmitoyl, acetyl)



Complexation

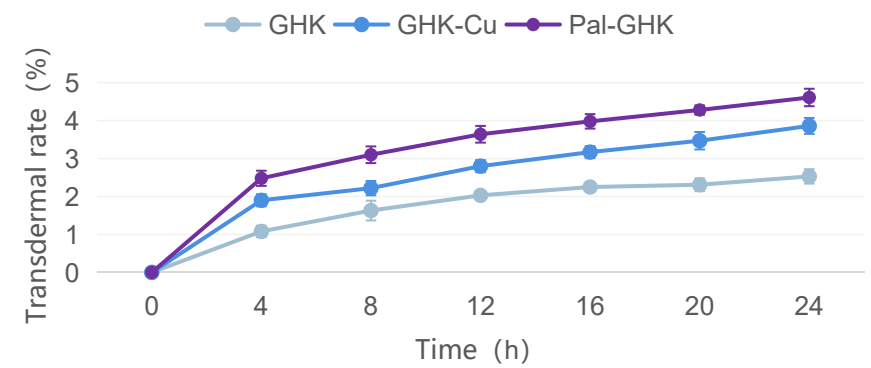


Chemical osmolality promoter



Variation in transdermal delivery

Comparison of transdermal properties of modified GHK



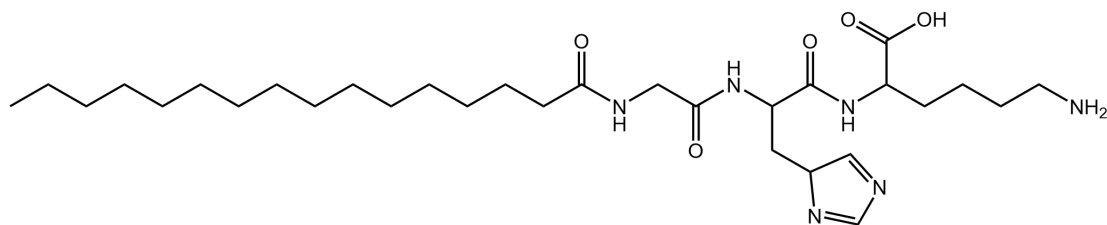
- ◆ Concentration: GHK, GHK-Cu and Pal-GHK are at 10 mg/mL.
- ◆ 4-hour transmittance: GHK-Cu shows 1.76x, and **Pal-GHK** shows 2.3x the transmittance of GHK.
- ◆ 24-hour transmittance: GHK-Cu reaches 1.53x, and **Pal-GHK** reaches 1.82x the transmittance of GHK.
- ◆ Transdermal rate: **Pal-GHK** > GHK-Cu > GHK



WrinFix-P3P1:

A potent collagen-stimulating peptide

- **INCI Name:** Palmitoyl tripeptide-1
- **CAS No.:** 147732-56-7
- **Molecular Formula:** C₃₀H₅₄N₆O₅
- **Molecular Weight:** 578.8 g mol⁻¹
- **Efficacy:** Anti-aging, anti-wrinkle
- **Dosage:** 10–1000 ppm



Versatile market application



CLARINS

Precious La Lotion Age-Defying Treatment Essence

Anti-wrinkle, firming, repairing

\$160/150 mL



SKIN CEUTICALS

A.G.E. Eye Complex for Dark Circles

Anti-aging, remove dark circles

\$132/15 g



Drunk Elephant

Protini™ Polypeptide Cream

Anti-aging, repairing

\$69/50 mL

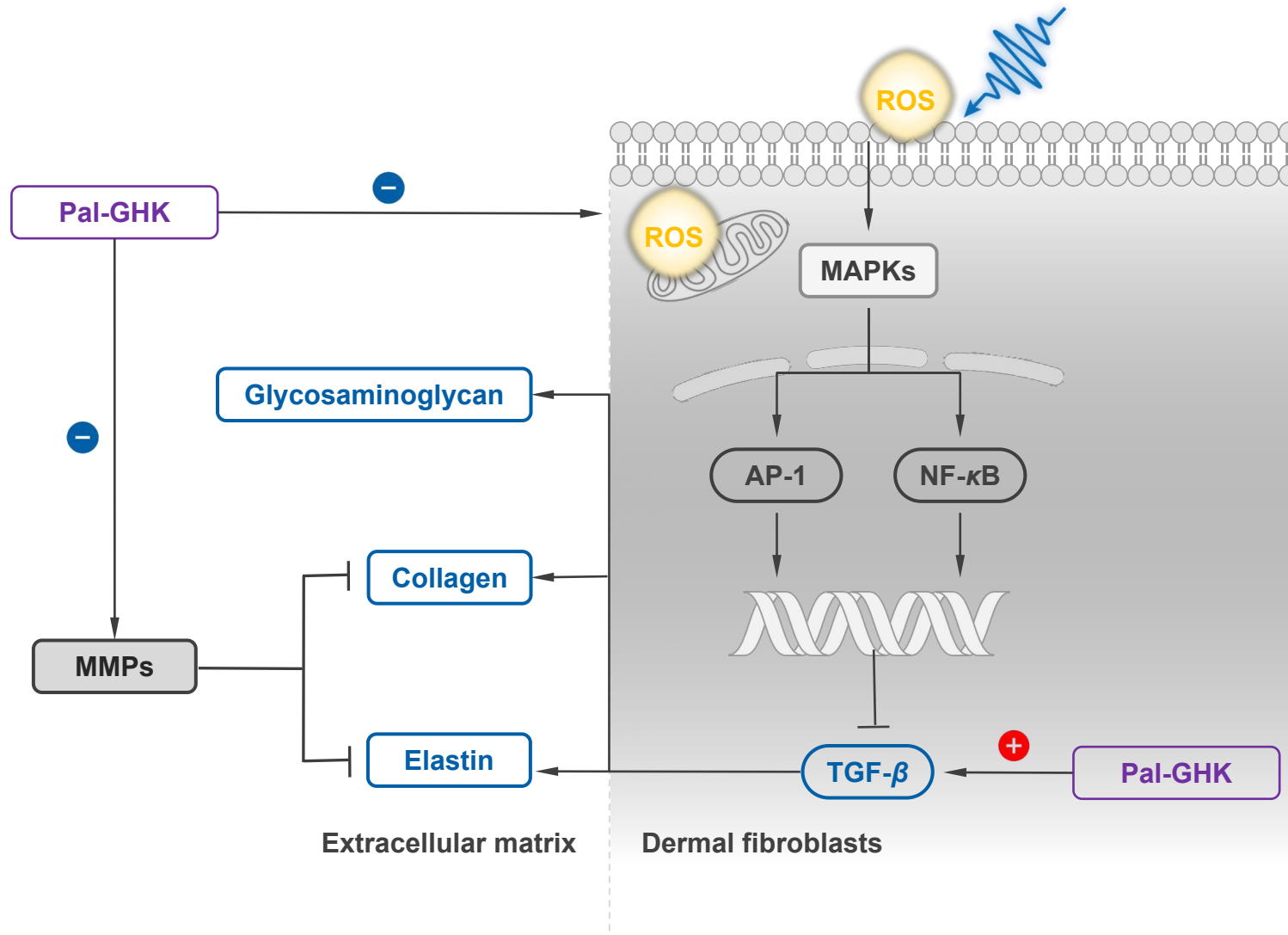
Product

Efficacy

Price

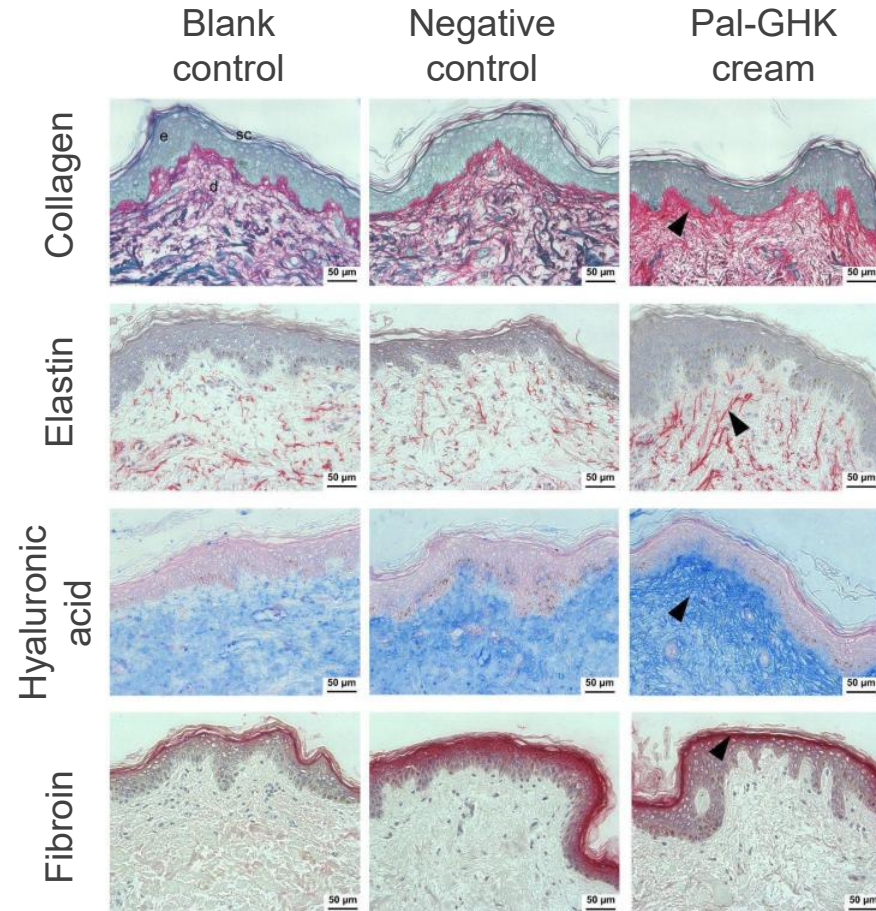
WrinFix-P3P1:

Activates TGF- β and promotes collagen production



WrinFix-P3P1:

Promotes collagen, elastin and reduces wrinkles

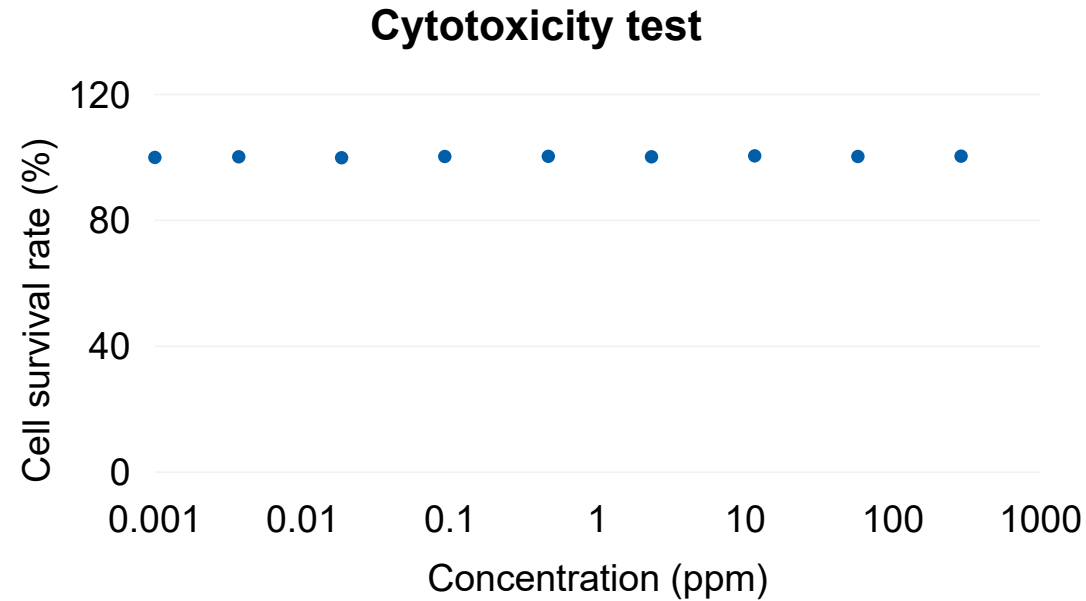


Comparison before and after using 100 ppm palmitoyl tripeptide-1 cream





WrinFix-P3P1: No cytotoxicity within 1000 ppm



- Cytotoxicity was not observed in the concentration range of 1 – 1000 ppm WrinFix-P3P1.

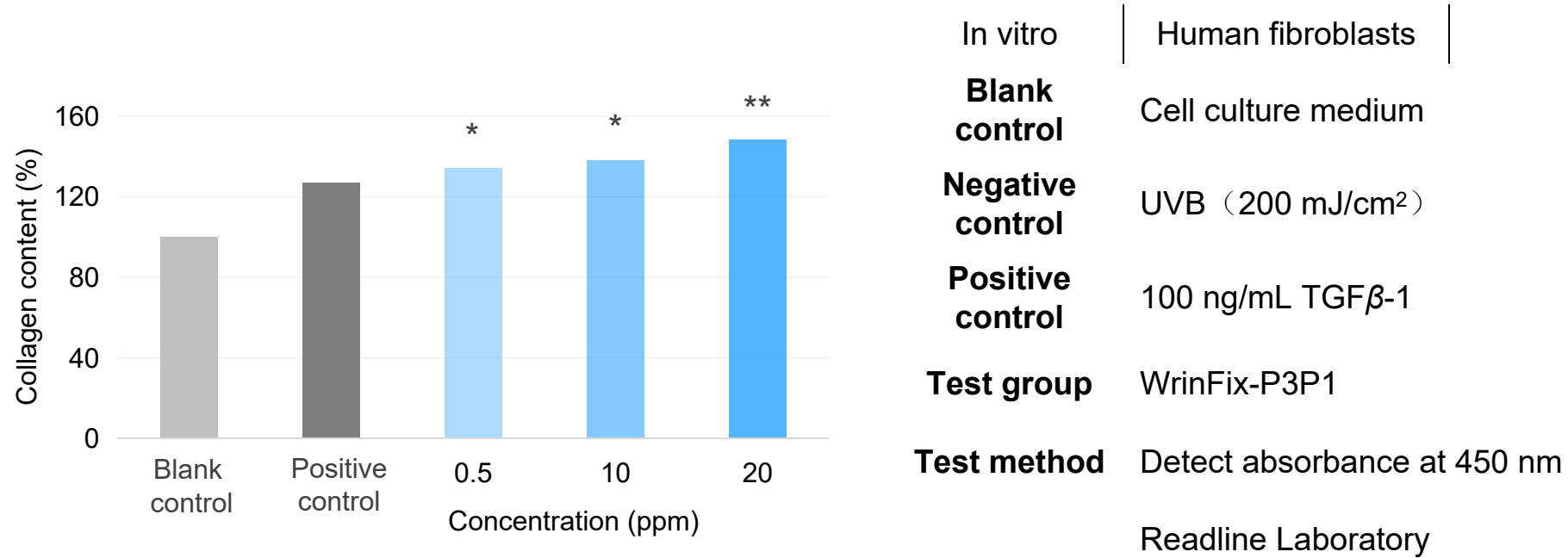
WrinFix-P3P1: Safety for use

Patch Test

Group	Number of subjects	observe time	Patch test number of different skin reaction levels				
			0	1	2	3	4
Readline WrinFix-P3P1	30	0.5 h	30	0	0	0	0
		24 h	30	0	0	0	0
		48 h	30	0	0	0	0
Negative control	30	0.5 h	30	0	0	0	0
		24 h	30	0	0	0	0
		48 h	30	0	0	0	0

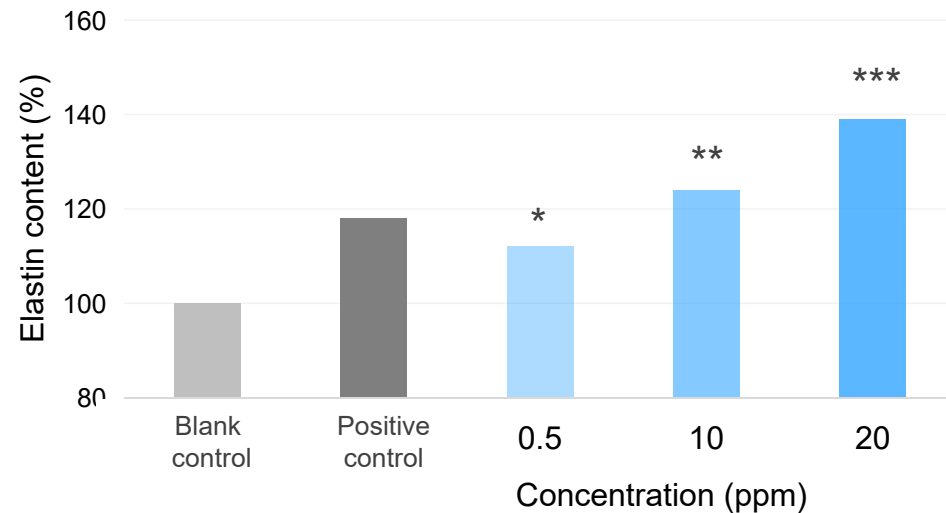
Result: Human skin patch test showed **200 ppm WrinFix-P3P1**, and 0 of 30 subjects had skin adverse reactions.

WrinFix-P3P1 can promote the collagen synthesis



20 ppm WrinFix-P3P1 increases collagen synthesis by **48.2%**.

WrinFix-P3P1 can promote the elastin synthesis

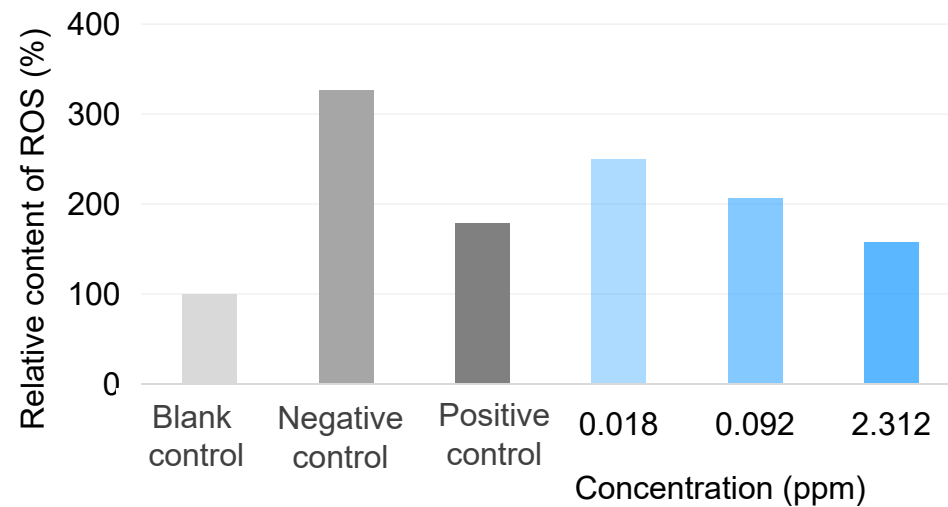


In vitro	Human fibroblasts
Blank control	Cell culture medium
Negative control	UVB (200 mJ/cm ²)
Positive control	100 ng/mL TGFβ-1
Test group	WrinFix-P3P1
Test method	Detect absorbance at 450 nm
	Readline Laboratory



20 ppm WrinFix-P3P1 increases elastin synthesis by **39.1%**.

WrinFix-P3P1 can inhibit the generation of intracellular ROS



In vitro	Human fibroblasts
Blank control	Cell culture medium
Negative control	UV
Positive control	UV + Vitamin E
Test group	WrinFix-P3P1
Test method	Detect absorbance at 450 nm
	Readline Laboratory



WrinFix-P3P1 can significantly reduce intracellular ROS.

WrinFix-P3P1: COSMOS approved

Conformity attestation
N°276691-20240319_0705

ECOCERT

Ecocert Greenlife SAS hereby confirms that:

Shenzhen Readline Biotech Co.,Ltd.
Floor3,Building2,ShenzhenBiologyIncubator,No.10,GaoxinC,1stAve.,Maling,Community,YuehaiResidentialDistrict,NanshanDistrict.5, ShenzhenCity, China
has raw materials approved in accordance with standard requirements:

COSMOS v4 in force (including all sub-versions)



For the following products categories:
Biotechnological microbial origin, Made with chemical transformation (mono ingredients), Cosmetic formulation bases

PPAI : Physically Processed Agro-Ingredients / CPAI : Chemically Processed Agro-Ingredients / NNI : Non Natural Ingredients (Petrochemical origin) / PeMo : Petrochemical Moiety
Without animal origin : Raw material compliant to the complementary assessment « without animal origin » in force
The asterisk* is used to identify the commercial name of the raw materials concerned by the appendices II and/or V of the Cosmos-standard.

Attestation issued on 19 March 2024 and valid until 31 December 2024.
ECOCERT Greenlife S.A.S
BP 47 Lieudt Lamothe Ouest - 32600 L'Isle Jourdain
FRANCE Phone : 05 62 07 34 24 - ecocert.com
Capital 50 000 € - SIREN 509 534 095 RCS AUCH
<https://ap.ecocert.com/ecoproducts>


Emilie CHERVAL, General Manager

FO38(GL)04en
Accreditation by COFRAC # 5-0520 for Certification of Products and Services, scope available on www.cofrac.fr. Page 1/5

Annex to the conformity attestation
N°276691-20240319_0705

ECOCERT

Shenzhen Readline Biotech Co.,Ltd.
Floor3,Building2,ShenzhenBiologyIncubator,No.10,GaoxinC,1stAve.,Maling,Community,YuehaiResidentialDistrict,NanshanDistrict.5, ShenzhenCity, China
has raw materials approved in accordance with standard requirements:

COSMOS v4 in force (including all sub-versions)

> **WrinFix-SNA**
Dipeptide Diaminobutyryl Benzylamide Diacetate
Skin conditioning
%PPAI : 0 %CPAI : 100 %NNI : 0 %PeMo : 0

> **Glutathione**
Glutathione
Skin conditioning
%PPAI : 0 %CPAI : 100 %NNI : 0 %PeMo : 0

> **D-nicotinamide mononucleotide**
D-nicotinamide mononucleotide
Skin conditioning
%PPAI : 0 %CPAI : 100 %NNI : 0 %PeMo : 0

> **Nonapeptide-1**
Nonapeptide-1
Skin conditioning
%PPAI : 0 %CPAI : 100 %NNI : 0 %PeMo : 0

> **Acetyl Tetrapeptide-5**
Acetyl Tetrapeptide-5
Skin conditioning
%PPAI : 0 %CPAI : 100 %NNI : 0 %PeMo : 0

> **Palmitoyl Tripeptide-1**
Palmitoyl Tripeptide-1
Skin conditioning

Attestation issued on 19 March 2024 and valid until 31 December 2024.
ECOCERT Greenlife S.A.S
BP 47 Lieudt Lamothe Ouest - 32600 L'Isle Jourdain
FRANCE Phone : 05 62 07 34 24 - ecocert.com
Capital 50 000 € - SIREN 509 534 095 RCS AUCH
<https://ap.ecocert.com/ecoproducts>

FO38(GL)04en
Accreditation by COFRAC # 5-0520 for Certification of Products and Services, scope available on www.cofrac.fr. Page 3/5



WrinFix-P3P1: Application information



Application Guide

- **Purity:** $\geq 98.0\%$
- **Solubility:** Partly soluble in water (< 1000 ppm)
- **Condition:** Protect from light, seal tightly, and store at $2-8^{\circ} \text{C}$
- **Suggested dosage:** 10–1000 ppm
- **Incompatibility:** Avoid with metal complexes



Documents

<input checked="" type="checkbox"/> SPEC	<input checked="" type="checkbox"/> COA	<input checked="" type="checkbox"/> MSDS
<input checked="" type="checkbox"/> TDS	<input checked="" type="checkbox"/> Material safety information	<input checked="" type="checkbox"/> Leaflet
<input checked="" type="checkbox"/> Product PPT	<input checked="" type="checkbox"/> Safety assessment report	<input checked="" type="checkbox"/> Test method
<input checked="" type="checkbox"/> HPLC spectrum	<input type="checkbox"/> Stability study	<input type="checkbox"/> Structure confirmation report
<input type="checkbox"/> Literature	<input checked="" type="checkbox"/> In vitro study	<input type="checkbox"/> Human efficacy report
<input type="checkbox"/> Permeability report	<input checked="" type="checkbox"/> Flow chart	<input checked="" type="checkbox"/> Declaration of ingredients
<input checked="" type="checkbox"/> COSMOS certificate	<input checked="" type="checkbox"/> HALAL	<input type="checkbox"/> Formulation guide
<input checked="" type="checkbox"/> Hazardous substances statement	<input type="checkbox"/> Natural origin index	<input checked="" type="checkbox"/> Declaration of origin
<input checked="" type="checkbox"/> Patent	<input checked="" type="checkbox"/> Non-GMO	<input type="checkbox"/> Others



Green Technology Healthy Life

Exclusively Distributed By:



"Your Innovation Partner"

www.integrityingredientscorp.com • info@integrityingredientscorp.com
(310) 782-0282



www.linkedin.com/company/readline/



0755-2665 9310



sales@szreadline.com



www.szreadline.com

This presentation may not be disclosed, distributed, copied, reproduced or used (in whole or in part) for any purpose without the express written consent of Shenzhen Readline Biotech. (Readline). The recipient of this document should agree to keep this presentation and its contents, as well as the content of any related discussions with representatives of Readline, strictly confidential. Readline does not make any representation or warranty as to the information contained in this presentation, and Readline shall not have any duty or obligation to update, correct or supplement the information. Readline undertakes no obligation to update or revise any statements, whether as a result of new information, future events or otherwise.

Copyright © 2024 by Shenzhen Readline Biotech. Co. Ltd. All rights reserved.