

# Biotin-GHK

INCI: Biotinoyl Tripeptide-1



***Active Peptide***

# General Introduction



- ❑ Established in 2013, Active Peptide Company is headquartered in Boston, USA. Its manufacturing center is located in the China National High-Tech Industrial Development Zone.
- ❑ We produce kilogram-scale batches of high purity peptides with patented technologies for cosmetic companies and distributors.
- ❑ We serve the world's most reputable customers in 28 countries and areas.

# Why Buy Biotin-GHK from Us?

- High Purity and Competitive Prices (due to our unique patented technology)



## **National Invention Patent**

Granted for Our Biotin-GHK Liquid-phase Technology in 2020

- Short Lead Time (we build stock and ship from our local offices)
- Environmentally Friendly (no chromatographic purification needed)
- Quality Consistence and Stability: (kilograms produced in each batch)
- Excellent Customer Service (see customer testimonials)

# Our Products

## Pure Peptide Powder & Peptide Solution



# Our Peptide Powder With Advanced Technology



- Anti-Wrinkle   ■ Hair Growth   ■ Eye Bag Reduction   ■ Skin Lightening and Elasticity
- Muscle Relaxation & Skin Comfort   ■ Skin Firming   ■ Lip Fullness   ■ Skin Moisturizing   ■ Whitening

	INCI	Other Name	Cat. No.
■	Acetyl Hexapeptide-8	Argireline**	AP106003
■ ■	Copper Tripeptide-1	GHK-Cu 1:1	AP103002
■ ■	Bis(Tripeptide-1) Copper Acetate	GHK-Cu 2:1	AP103001
■ ■	Acetyl Dipeptide-1 Cetyl Ester	NATAH	AP102002
■ ■	Hexapeptide-11		AP106005
■	Dipeptide-2	VW	AP102001
■	Tripeptide-1	GHK	AP103008
■ ■	Palmitoyl Tripeptide-1	Pal-GHK	AP103005
■ ■ ■	Palmitoyl-Tripeptide-5 *	Pal-KVK	AP103006
■	Dipeptide Diaminobutyroyl * Benzylamide Diacetate		AP103011
■	Biotinoyl Tripeptide-1	Biotin-GHK	AP103010
■ ■	Palmitoyl Tetrapeptide-7	Pal-GQPR	AP104001
■ ■	Palmitoyl-Pentapeptide-4	Pal-KTTKS	AP105001
■	Nonapeptide-1 *		AP109001



\* Research Use Only  
\*\* Product Trademark of Origin Company

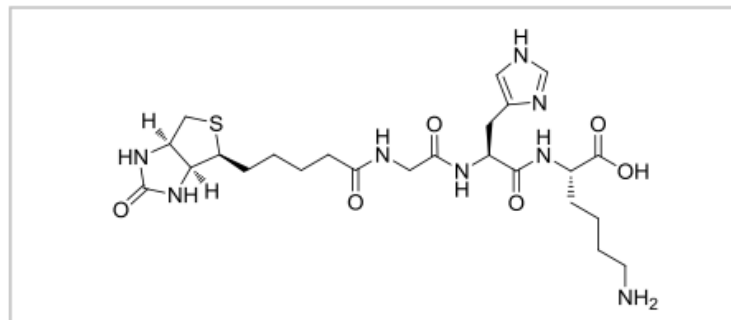


# Our Biotin-GHK Powder

**INCI Name** BIOTINOYL TRIPEPTIDE-1

**CAS No.** 299157-54-3

**Sequence** Biotin-Gly-His-Lys-OH



## Specifications:

**Appearance** *White powder*

**SKU No.** *AP103010*

**Purity (by HPLC)** *>98%*

**Water (k.F)** *<7%*

**Molecular Formula** *C<sub>24</sub>H<sub>38</sub>N<sub>8</sub>O<sub>6</sub>S*

**Storage** *2~8°C, dry and dark place*

**Package** *Plastic bottles or glass bottles of varied sizes, or customized packages based on special requests*



- Active Peptide branded biotin-GHK is pure powder with purity >98%. No excipients, preservatives, anti-oxidants present, or used during the manufacturing process.
- It is 100% synthesized in laboratory. Neither palm derived nor sustainably sourced.

# Our Biotin-GHK Solution

Inspection Item	Standard
Appearance	clear transparent liquid
pH	4.5~6.5
Refractive Index	1.320~1.360
Relative Density	0.970~1.030
Total amount of aerobe	$\leq 100$ CFU/ml
Yeasts and Mold	$\leq 10$ CFU/ml
Escherichia coli	not detectable
Pseudomonas aeruginosa	not detectable
Staphylococcus aureus	not detectable
White streptococcus	not detectable
Peptide content	$\geq 100$ µg/g



- Our solutions are created using the company's self-manufactured high purity peptide powder. We customize the peptide solution based on the customer's requirements for concentration and formula.
- We use advanced ozone technology to sterilize the packaging materials. All products are made in a GMP-standard sterilized area with strict control of microorganisms.

# Our Advanced Technology

## Our Patented Liquid-phase synthesis Technologies for Producing Kilograms of Biotin-GHK



“

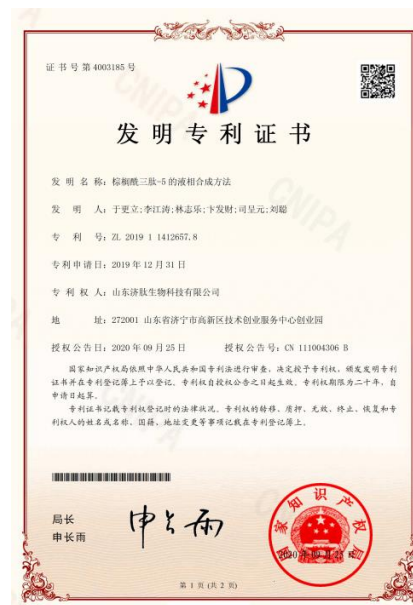
*We have made a significant breakthrough in kilogram-scale production of high purity peptides. Our unique liquid-phase synthesis technology has the shortest synthetic routes and avoids using any chromatographic purification, which allows us to produce kilograms of pure peptides in a single batch. This process is much faster, more cost-efficient, and eco-friendly.*

— Principal Scientist Dr. Lee Yu



# Our Advanced Technology

## Three National Invention Patents Granted for Company's Liquid-phase Technology in 2020



PATENTS



- [CN111004304B - Liquid phase synthesis method of \*\*biotin tripeptide-1\*\* - Google Patents](#)
- [CN110950926B - Liquid phase synthesis method of snake venom-like tripeptide - Google Patents](#)
- [CN111004306B - Liquid phase synthesis method of palmitoyl tripeptide-5 - Google Patents](#)

# About Biotin-GHK

**Function:** Fights follicle aging and protects against hair loss. Biotin-GHK provides a protecting and repairing effect on the structure components of the hair follicle. Hair anti-aging can be promoted by stimulation of follicle cell metabolism, leading to a slow down in hair loss.

**Applications:** Hair care products; shampoos, conditioners, hair lotions

## Clinical Study of Biotin-GHK:

Panel of 35 males with alopecia ( $T_{\text{mean}}=28\%$ ) applied a hair lotion with 10ppm biotin-GHK (18 volunteers) or a placebo (17 volunteers) twice daily for 4 months. The proportion of hair observed in anagen phase (A) and telogen phase (T) was determined and the ratio A/T established. Hair samples were taken and analyzed.

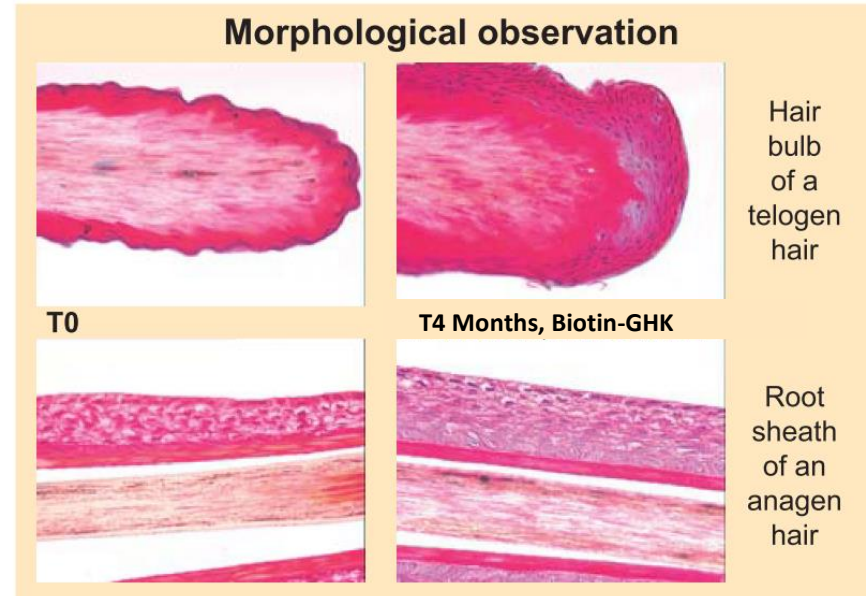
- **Videotrichogramme**

A/T (Mean value)	<b>Biotin-GHK</b>	<b>PLACEBO</b>
T0	2.84	2.61
T4months	<b>3.13</b>	2.54

The A/T ratio increases significantly by up to 46%, compared to T0 and the placebo. With PROCAPIL™, **67% of the volunteers had their anagen hair number increased.**

- **Hair follicle morphological study**

After treatment, hair bulb cells were found to be highly structured and differentiated. The root sheath was thicker and more able to provide optimum anchoring.



# About Biotin-GHK

## *Stimulation of cell metabolism*

### ● Mitosis rate

Evaluation of root sheath keratinocytes after a 14-day culture of hair follicles. Biotin-GHK (2 ppm) stimulates Ki-67 expression, indicating enhanced cell proliferation.

### ● Gene expression

Biotin-GHK promotes the expression of numerous genes involved in tissue repair mechanisms

### ● Hair anchoring

Hair follicles are incubated for 14 days with biotin-GHK (2 ppm).

Morphological observation of the dermis/root sheath junction.

The persisting dermis/root sheath junction is thick and recovers its normal sinusoidal shape.

Laminin 5 and collagen IV are revealed by immune fluorescence.

### ● Stimulation of hair growth

Hair follicles are incubated for 14 days with biotin-GHK or minoxidil (2 ppm).

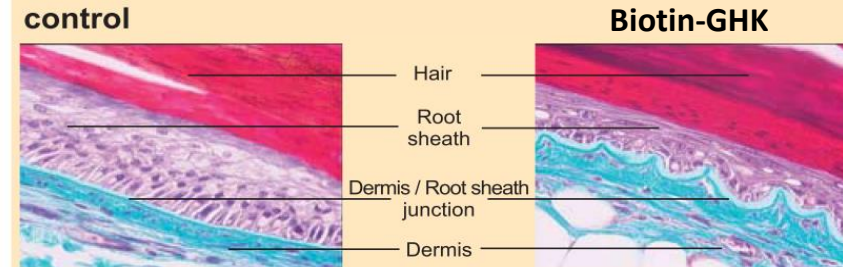
Biotin-GHK is as efficient as minoxidil at the same concentration ( 2ppm).

## *In Vitro*

### Examples of activated genes by Biotin-GHK

Gene	Activity	Activation
Laminin binding protein	Adhesion	<b>+146%</b>
Acetyl CoA transferase	Cell metabolism	<b>+137%</b>
Cytokeratins 10	Differentiation	<b>+154%</b>

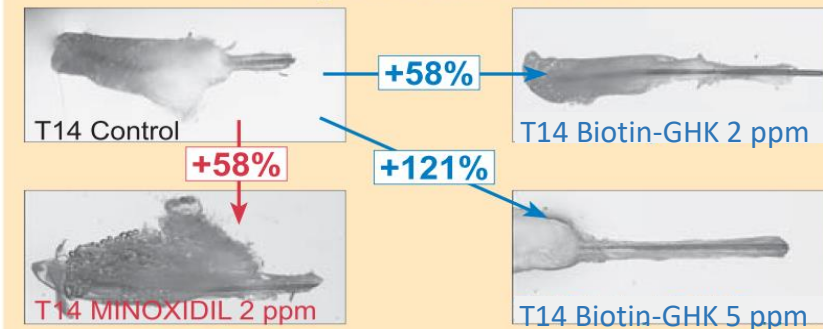
### Morphological observation



### Presence of adhesion molecules

Adhesion molecules	T14 Control	T14 Biotin-GHK
Laminin 5	+	<b>+++</b>
Collagen IV	+	<b>++++</b>

### Hair growth stimulation





# Serving the World's Most Reputable Customers

Johnson & Johnson



Skin Biology  
LOREN PICKART PhD Products Based on Real Published Science



kdc



BEAUTÉ PACIFIQUE

 *Active Peptide*



# Customer Profile

## Dr. Loren Pickart, the Inventor of Copper Peptide, Uses Kilograms of Our Peptides in His Cosmeceutical Brand

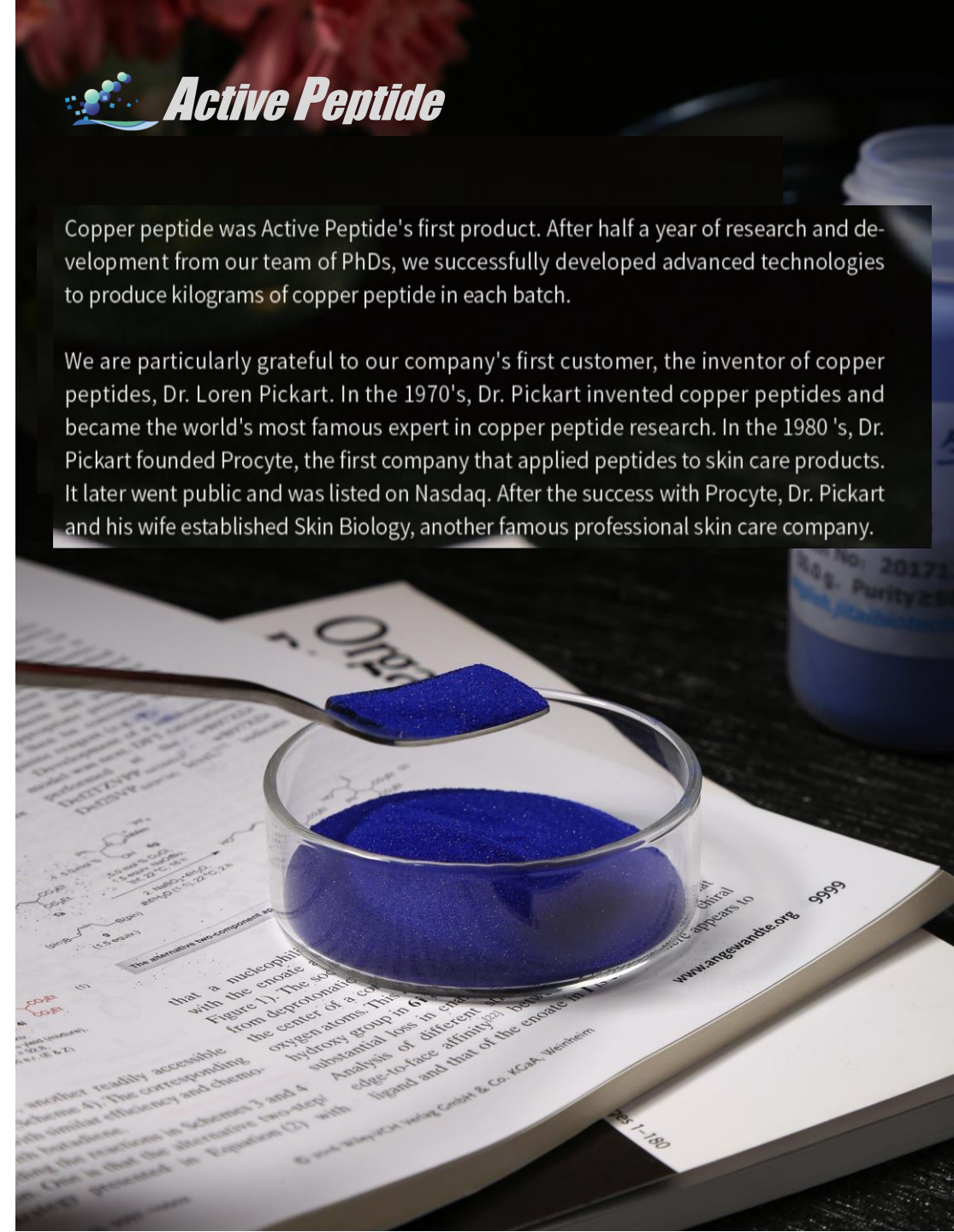
### Skin Biology

LOREN PICKART PhD Products Based on Real Published Science



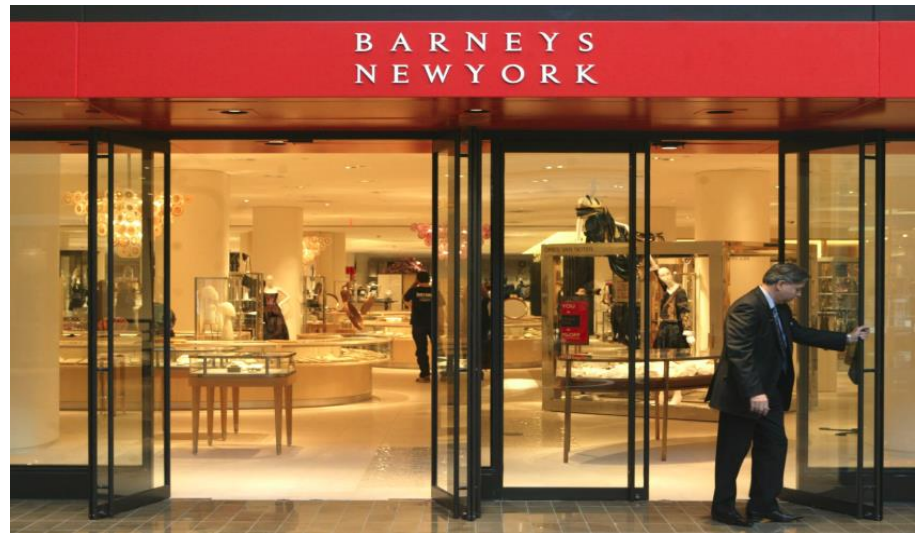
Copper peptide was Active Peptide's first product. After half a year of research and development from our team of PhDs, we successfully developed advanced technologies to produce kilograms of copper peptide in each batch.

We are particularly grateful to our company's first customer, the inventor of copper peptides, Dr. Loren Pickart. In the 1970's, Dr. Pickart invented copper peptides and became the world's most famous expert in copper peptide research. In the 1980 's, Dr. Pickart founded Procyte, the first company that applied peptides to skin care products. It later went public and was listed on Nasdaq. After the success with Procyte, Dr. Pickart and his wife established Skin Biology, another famous professional skin care company.



# Customer Profile

## Collaborating With



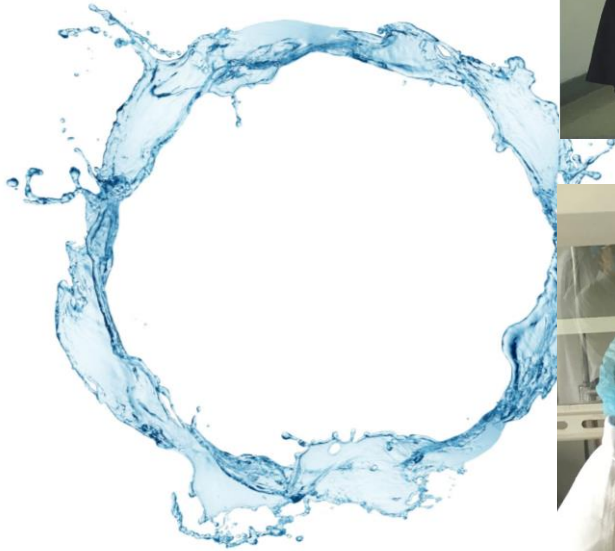
Successfully launched in Barneys New York, an American chain of luxury department stores In November 2017



# Customer Profile

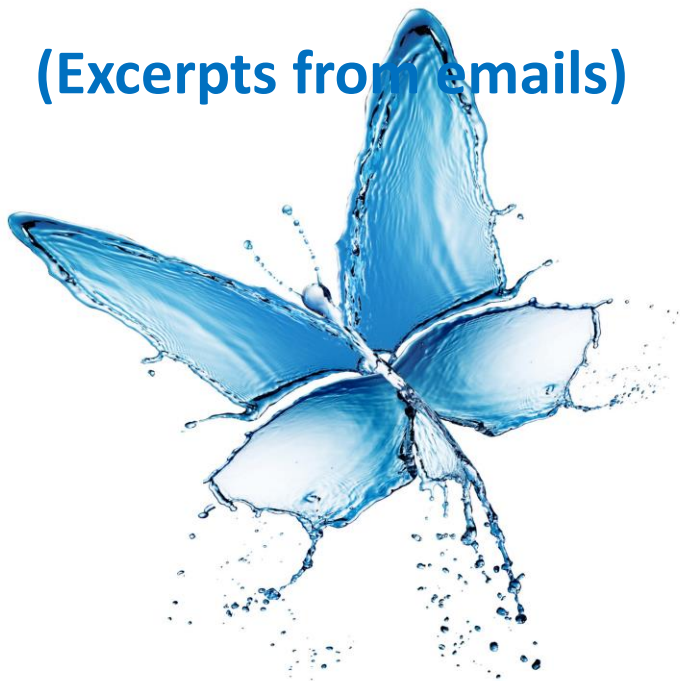
## Passed Customer Audit from HYUNDAI IBT

One of The Largest Korean Cosmeceutical Companies' On-site Audit in 2017



# Global Customer Comments

(Excerpts from emails)



**“ I do appreciate your effort and integrity. I'll likely get more in the near future.**

*- N. Bauer, CEO of Nyles7 at Arizona USA*

**“ Thank you ! LOVING the GHK-Cu, so glad you found me!**

*- N. Nivolo, CEO of NCN Professional SkinCare at Connecticut USA*

**“ I love to talk to you guys. You are very professional and knowledgeable.**

*- F. Priet, Researcher of JFA Ceuticals in India*

**“ The package reached to us so quickly!**

*- F. Jang, Scientist of Seoul National University, Korea*

**“ Thank you for your strong technical support and working so hard to help us!**

*- G. Floyd, Pole Cosmetique, Purchasing Manager, France*

**“ The Sample you provided was the best peptide our customers have ever seen!**

*- H. Cheng, CEO of Shanghai Ruidong Biotech, China*

**“ The issue was all solved. Thank you for working so hard to help us!**

*- J. Gottlieb of InnoCent International GmbH in Germany*

**“ Thank you for your excellent services. It was such a pleasure to do business with you!**

*- R. Cloete of DRA Pharmaceuticals, South Africa*



# Our Advanced Technology

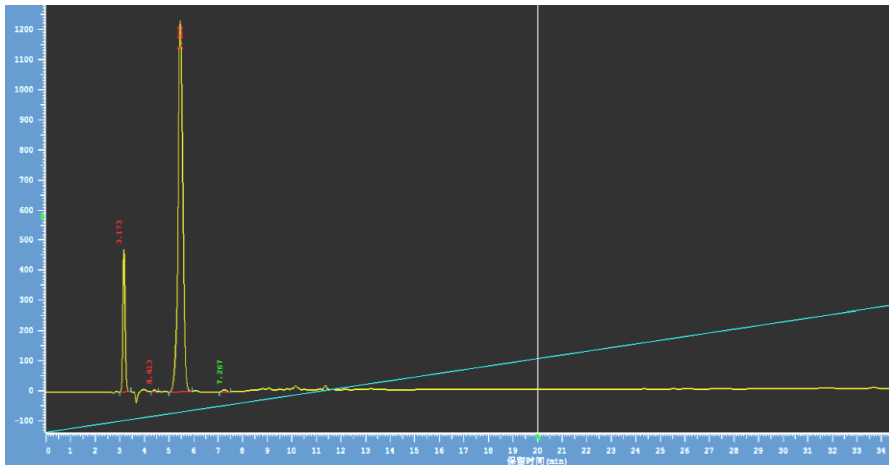
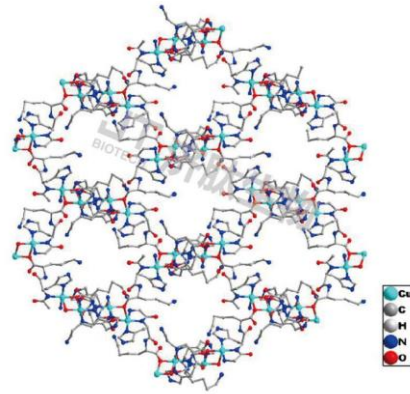
## Example: GHK-Cu Copper Peptide



- **Other brands** of copper peptide powder are usually in powder form, due to the traditional production process of freeze-drying. It takes more time, steps, and resources to produce, so the production cost is high. The powder has a large surface area, which causes it to absorb humidity and stick to the wall of the bottle, making it harder to store and weigh.
- **Our brand** of copper peptide powder is in crystal format due to our patented liquid-phase synthetic method and crystallization technology. Because of this, our peptide is not prone to absorbing humidity from the air and does not stick to the wall of the bottle, which makes it easier to store and weigh.

# Our Advanced Technology

## Example GHK-Cu Copper Peptide



MICROCONSULT, INC. MICROBIOLOGICAL & ANALYTICAL TESTING LABORATORY	
3229 Cassanville Dr., Suite 100, Carrollton, TX 75006 - Phone: 972.250.2802 - Toll Free: 888.235.7002 - Fax: 972.250.2903 - www.microconsultinc.com	
Certificate of Analysis	
Product Name:	GHK-Cu
Lot Number:	N/A
Lab Number:	CD038916
Analysis Date:	May 02, 2016
Analyst Name:	Carlos Parra, Carolyn Vercell
Methods:	CAM 216, CAM 475, CAM 77
Equipment Type:	HPLC, ICP, Karl Fischer
Sample Types:	Raw Material
Active	Test Results
Water Content	2.5%
Copper	6%
GHK-Cu	HPLC Area%: 100.0%; Impurities: 0.78%

# Our Advanced Technology

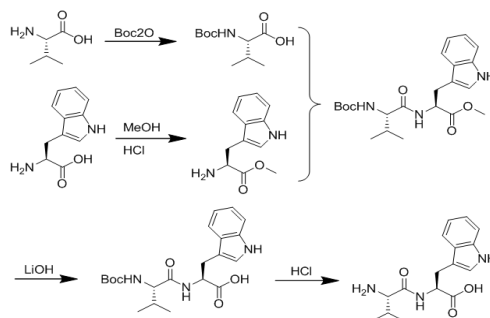
## Example • Dipeptide-2 • Eye Bag Reduction

### Traditional Method

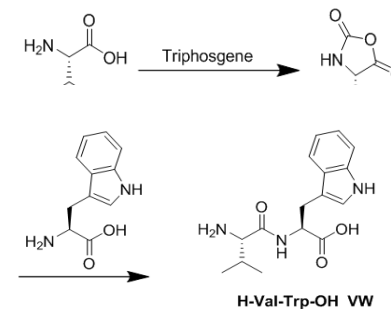
### Active Peptide Technology



- **Five Steps**
- Limited Output in Each Batch
- High Production Cost
- Time Consuming
- More Waste

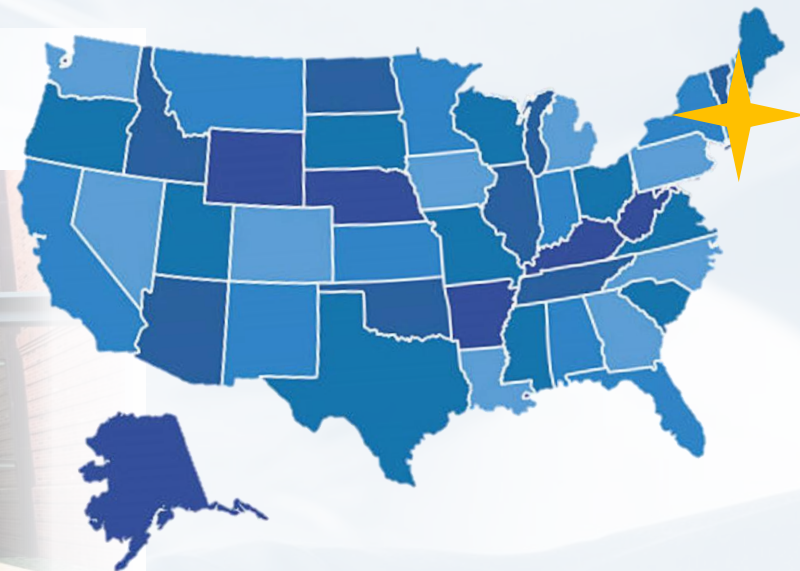


- Only **Two Steps** Needed
- Kilograms Produced in Each Batch
- Reduced Production Cost
- Significantly Shortened Lead Time
- Eco-friendly





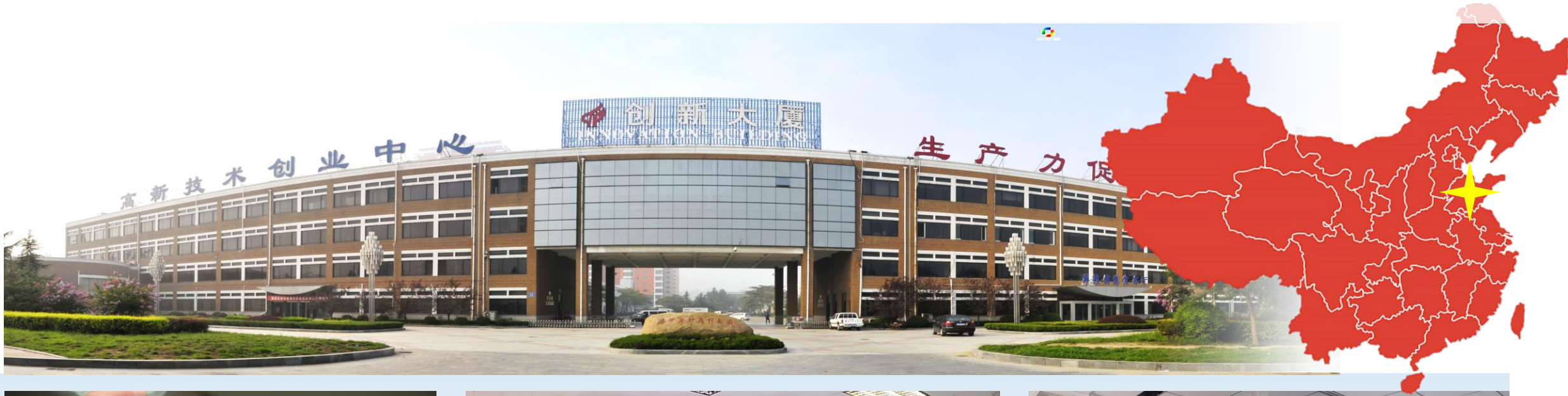
# Customer Office in Boston, USA



Our Team Providing Technical Support, Global Customer Service, and Shipping



# R&D AND PRODUCT DEVELOPMENT LABRATORY



A 12,000 square-foot laboratory equipped with advanced instruments and technology and located in the China High-tech Industrial Development Zone



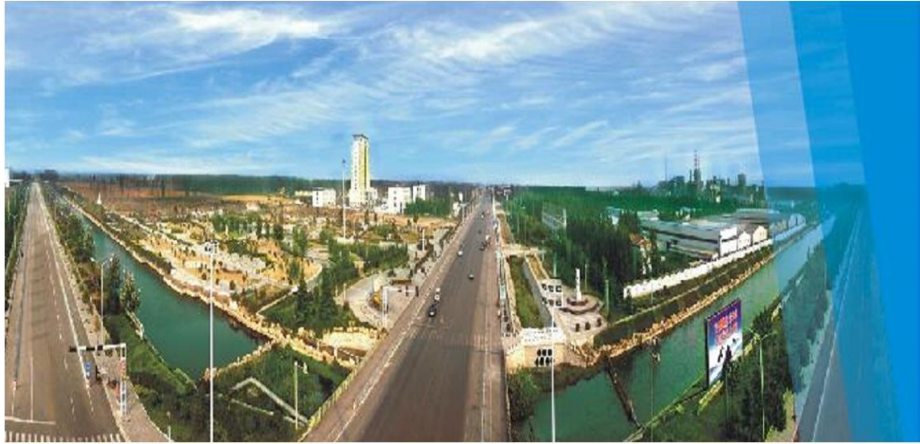
# GMP ROOM FOR POWDER PURIFICATION & PEPTIDE SOLUTION PRODUCTION



5,000 Square Foot GMP Room Located at National High-tech Industrial Development Zone in China



# LARGE-SCALE PRODUCTION BASE



30,000 square feet with three floors  
Located at the High-tech New Medical Park Incubation Center in Zoucheng, Shandong





**We are Committed to Becoming Your  
Best Resource for Peptides!**

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 **Active Peptide**

