



AntiAgingPhD.com

April, 2024

AntiAgingPhD.com

1. Corporate Vision and Mission
2. Patented Technology
3. Characteristics of Peptide Action
4. Product Introduction & Testimonials
5. Market Analysis



Corporate Vision and Mission

Vision

Become the world's leading peptide development and manufacturing group, providing customized services and bulk raw materials to global enterprises.

Mission

Harnessing our proprietary peptide technologies to collaborate with industries across sectors and benefit society.



What are peptides?

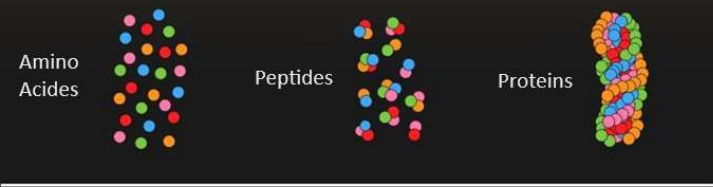
Proven by a century of scientific researches

Peptides, the most important functional regulators of the human body

- ✓ **Peptides** are a class of compounds formed by the linkage of two or more amino acids through peptide bonds. They are intermediate substances between amino acids and proteins.
- ✓ **Peptides** are the building blocks of proteins and serve as their structural and functional units. They form the active sites of proteins that enable their biological functions.
- ✓ **Peptides** serve as cellular messengers, regulating cellular expression, replication, and repair.

All life processes in the human body, including growth, development, reproduction, metabolism, and behavior, are inseparable from peptides.

Peptides are a class of compounds formed by the linkage of two or more amino acids through peptide bonds. They are intermediate substances between amino acids and proteins.



Summary of the potential effects of peptides:



Thousands of peptides exist in living organisms, encompassing hormones, nerves, cell growth, reproduction, tumorigenesis, neurohormone transmitters, and immune regulation, extensively participating in and regulating the functional activities of various systems, organs, and cells within the body.

Patents

China
CPO2495722B

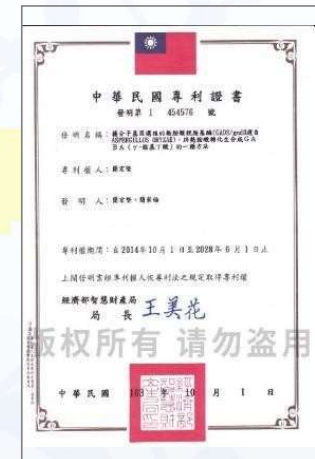
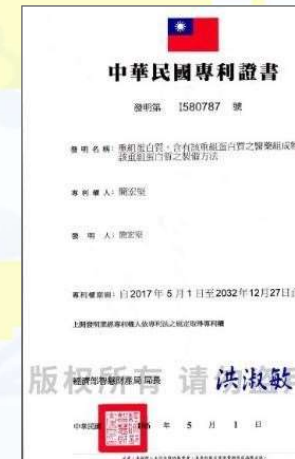
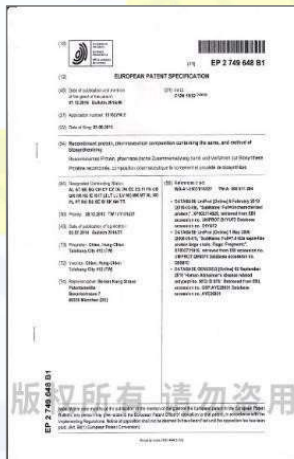
EU
EPO2749648B1

Japan
JPO5916692

US
USPTO923
3999B2A

Taiwan
TPOI580787

Taiwan
TPOI454576



Several other key new patents are under development and approval.

Multi-peptide Expression System

> Animal Breeding & Growth



> Health & Recovery



> Skin Care



> Food Additive & Flavoring Peptides



> Metal Peptide for Mining



Technical Core Value

100% Amino Acid Sequence Accuracy

Achieving 100% accuracy for both long and short peptides, overcoming the limitations of low accuracy in chemical synthesis, and leading to more powerful functionalities.

Unlimited Production Scale

Large-scale Production with Significant Cost Advantages

Orally Effective Protection Design
Alternative to Injection

Addressing the Challenge of Oral
Delivery for Peptide Drugs

High Concentration + Combination Innovation

Concentration can reach 50% or even higher, and multiple different peptides can be combined at the same time for stronger functionality.

Whole Process Without Chemical Additives

Greener, Safer, More
Secure

**Original
Unique
Innovative
Mature**

Wide Range of Applications

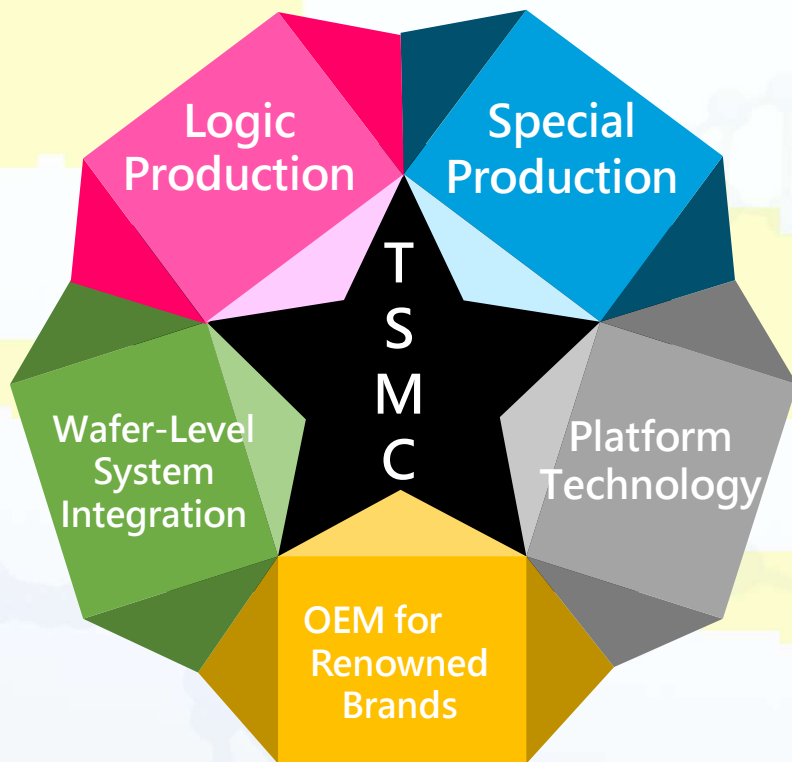
Biopharmaceuticals/Cosmetics

Functional foods/Dietary supplements

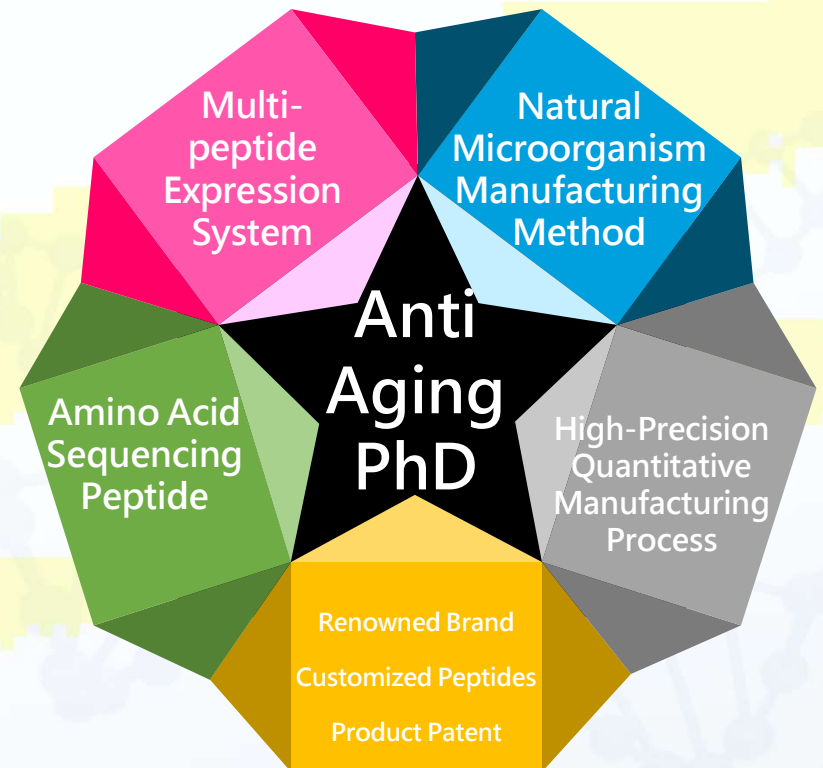
Agriculture, fishery, and animal husbandry



TSMC of Peptides



VS



TSMC's Unique Global Patented Processes: **High Yield, High Technology, High Output**

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AntiAgingPhD offers a range of **high-quality, high-tech, and high-yield** peptide services to clients worldwide.

A Pioneer in Global Peptide Manufacturing Technology
AntiAgingPhD.com

Product Liability



Insurance policy covers all ingredients for global marketing



國泰世紀產物保險股份有限公司

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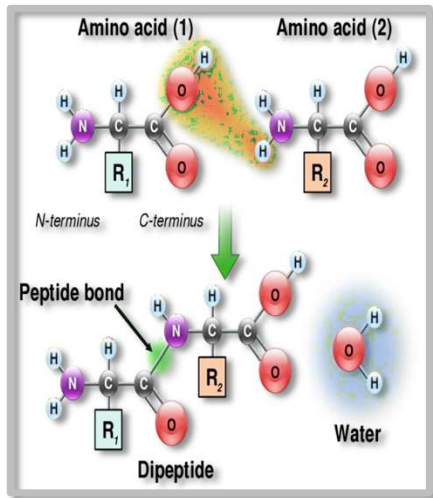
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	EXCESS LIABILITY <input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> DEDUCTIBLE <input type="checkbox"/> RETENTION				EACH OCCURRENCE \$ AGGREGATE \$ \$ \$
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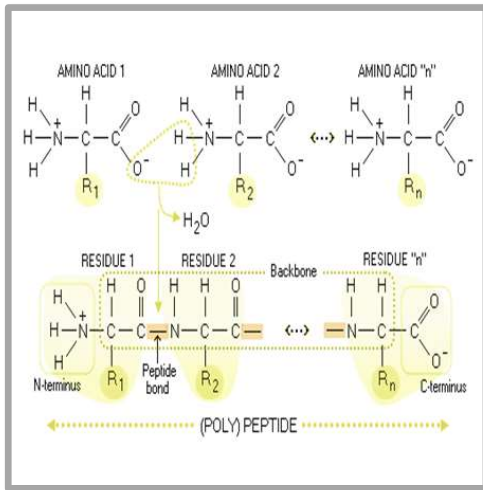
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Pioneering and Leading Global R&D and Manufacturing Processes



100% Accurate Amino Acid Sequence



Multi-peptide Expression System



Natural Microbial Manufacturing Method
Peptide Chain Protection to Prevent Degradation



High-Precision Quantitative Production Process for Natural Small Molecule Peptides

Comparative Analysis of Different Peptide Technologies



Key Metrics	AntiAgingPhD Fermented	Chemical Synthesis	Gene Synthesis	Enzyme-Catalyzed Hydrolysis
Taken Orally?	Yes	No	No	Yes but cleaved
Administration Method	orally/injected	75% injected		No
Amino Acid Accuracy	100%	High	Middle	Low
Peptide Concentration	High(60%)	High	Middle	Low
End Product Peptide Concentration	Very High (10mg/g)	High	Middle	Low
Functionality	Very Strong	Strong	Middle	Week
Amino Acid Synthesis Length	Unlimited	10-100aa	Long	No order
Single Product Output	Tonnage	Kilograms	Kilograms	100 Kilograms
Applications	Drugs Food Cosmetics	Drugs Cosmetics	Drugs Cosmetics	Food

Miraculous Peptide Nobel Evidence

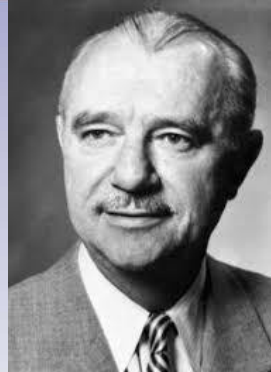
Hermann Emil Fischer won the Nobel Prize for the world's first peptide in 1902



Sir Frederick Grant Banting 1923 Nobel Prize in Medicine



Vincent du Vigneaud 1955 Nobel Prize in Chemistry



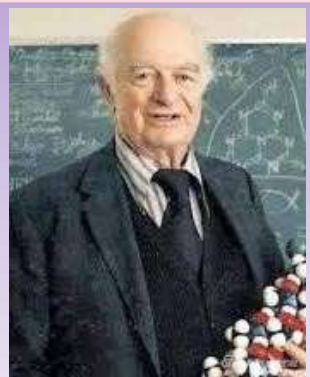
Herber Boyer 1958 Nobel Prize in Biology



Rosalyn Sussman Yalow 1977 Nobel Prize in Physiology or Medicine



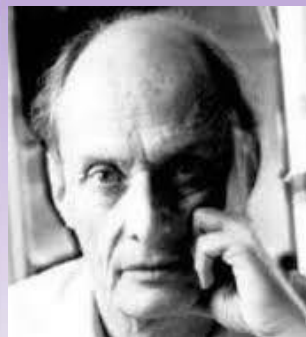
Robert Bruce Merrifield 1984 Nobel Prize in Chemistry



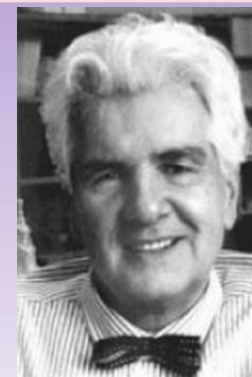
Stanley Cohen and Rita Levi-Montalcini 1986 Nobel Prize in Medicine



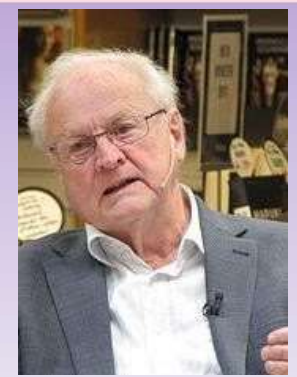
Alan Sieber 1993 Nobel Prize



Gunter Blobel 1999 Nobel Prize in Biomedicine

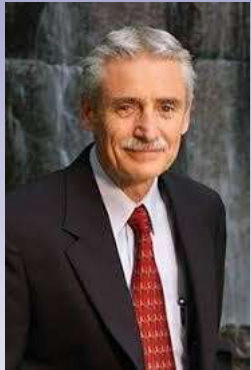


Arvid Carlsson Nobel Prize in Chemistry 2000

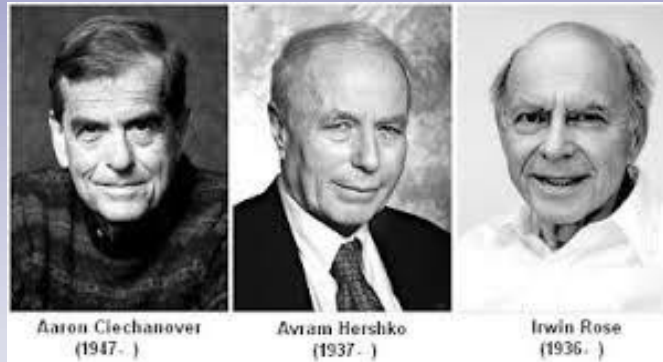


Miraculous Peptide Nobel Evidence

Leland Hartwell 2001
Nobel Prize in
Chemistry



Aaron Ciechanover, Avram Hershko and Irwin Rose
2004 Nobel Prize in Chemistry



Andrew Z. Fire, Craig C.
Mello 2006 Nobel Prize in
Physiology or Medicine



Roger D. Kornberg
2006 Nobel Prize in
Chemistry



Jack W.Szostak, Carol W.Greider,
Elizabeth H.Blackburn
2009 Nobel Prize in Physiology or
Medicine



Aziz Sancar, Tomas Lindahl and Paul
Modrich
2015 Nobel Prize in Chemistry



Frances H. Arnold, George P. Smith and
Gregory P. Winter
2018 Nobel Prize in Chemistry





AntiAgingPhD Products

Ranking	Health products: suitable for a variety of animals	Skin Care	Others
1	Longevity I, Longevity II	Whitening	Sugar Protein (Brazzein etc.)
2	Bone & Muscle	Sun Protection	Endotoxin Neutralizer
3	Sleep Well	Anti Wrinkle	(Chicken, duck, beef, pig, puffer fish, etc.) flavor peptides
4	Anti Allergy	Anti Allergy	(coffee, cocoa, chocolate, etc.) food peptides
5	Lower Sugar Level	Eye Bag Remover	(Precious metals, rare earths, lithium, cobalt, etc.) metal mining peptides
6	Growth Protein	Anti Hair Loss	(Anti moisture, dust, odor) textile peptides
7	Healthy Organ Protein	Black/Red Hair	
8	Healthy Bones		
9	Better Slim		
10	6 in 1 (Lower blood pressure + blood sugar + blood lipids + cholesterol + gout + allergies)		

Note: Some products are still under trial and development

Note: Peptide Biotech has developed more than 30 products in Taiwan over the past 20 years. Each product includes 1-25 peptides, with a total of more than 500 peptides.

BIOGERONTOLOGY

Peptide Promotes Overcoming of the Division Limit in Human Somatic Cell

V. Kh. Khavinson, I. E. Bondarev, A. A. Butyugov, and T. D. Smirnova

Translated from *Byulleten' Eksperimental'noi Biologii i Meditsiny*, Vol. 137, No. 5, pp. 573-577, May, 2004
Original article submitted January 24, 2004

Biogerontology (2010) 11:139–149
DOI 10.1007/s10522-009-9249-8

RESEARCH ARTICLE

Peptide bioregulation of aging: results and prospects*The FASEB Journal* • Review**Biological activities of thymosin β_4 defined by active sites in short peptide sequences**Gabriel Sosne,^{*,†} Ping Qiu,[†] Allan L. Goldstein,[†] and Michelle Wheeler[‡]

^{*}Department of Ophthalmology and Anatomy/Cell Biology, Wayne State University School of Medicine, Detroit, Michigan, USA; [†]The George Washington University School of Medicine and Health Sciences, Washington, District of Columbia, USA; and [‡]University of Detroit Mercy School of Dentistry, Detroit, Michigan, USA

Ann. N.Y. Acad. Sci. ISSN 0077-8923

ANNALS OF THE NEW YORK ACADEMY OF SCIENCES

Issue: *Thymosins in Health and Disease***Thymosin β_4 : structure, function, and biological properties supporting current and future clinical applications**

David Crockford, Nabila Turjman, Christian Allan, and Janet Angel

RegeneRx Biopharmaceuticals Inc., Rockville, Maryland, USA

Address for correspondence: David Crockford, RegeneRx Biopharmaceuticals Inc., 15245 Shady Grove Road, Suite 470, Rockville, MD 20850, USA. dcrockford@regenerx.com

Published studies have described a number of physiological properties and cellular functions of thymosin β_4 (T β_4), the major G-actin-sequestering molecule in mammalian cells. Those activities include the promotion of cell migration, blood vessel formation, cell survival, stem cell differentiation, the modulation of cytokines, chemokines, and specific

Review

From lab to bedside: emerging clinical applications of thymosin α_1 Ilan L Goldstein[†] & Adam L Goldstein^{*}*The George Washington University School of Medicine and Health Sciences, Washington DC, USA**Medical School for International Health at Ben-Gurion University of the Negev, Be'er Sheva, Israel*

Bone & Muscle Product



The Eurasian
Journal of Medicine

Eurasian J Med. 2016 Jun; 48(2): 95–101.
doi: [10.5152/eurasianjmed.2015.15030](https://doi.org/10.5152/eurasianjmed.2015.15030)

Effects of Native Type II Collagen Treatment on Randomized Controlled Trial

[Fulya Bakilan](#)¹, [Onur Armagan](#)², [Merih Ozgen](#)², [Funda Tascioglu](#)², [Ozge Bolluk](#)³ and [Ozkan Alatas](#)⁴

▶ Author information ▶ Article notes ▶ Copyright and License information Disclaimer

▶ *Int J Food Sci Nutr.* 2010 Feb;61(1):52-60. doi: [10.3109/09637480903257711](https://doi.org/10.3109/09637480903257711).

Hydroxyproline-containing dipeptides and tripeptides quantified at high concentration in human blood after oral administration of gelatin hydrolysate

[Satomi Ichikawa](#)¹, [Masashi Morifuji](#), [Hiroki Ohara](#), [Hitoshi Matsumoto](#), [Yasuo Takeuchi](#), [Kenji Sato](#)

Int J Med Sci. 2009; 6(6): 312–321.

Published online 2009 Oct 9. doi: [10.7150/ijms.6.312](https://doi.org/10.7150/ijms.6.312)

PMCID: PMC2764342

PMID: [19847319](https://pubmed.ncbi.nlm.nih.gov/19847319/)

Safety and efficacy of undenatured type II collagen in the treatment of osteoarthritis of the knee: a clinical trial

[David C. Crowley](#)¹, [Francis C. Lau](#)², [Prachi Sharma](#)¹, [Malkanthi Evans](#)¹, [Najla Guthrie](#)¹, [Manashi Bagchi](#)², [Debasis Bagchi](#)^{2,3}, [Dipak K. Dey](#)⁴ and [Siba P. Raychaudhuri](#)^{5,6,✉}

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[Mary Ann Liebert](#)

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Similar articles

Indoleamine 2,3-dioxygenase-expressing dendritic cells are involved in arthritis [Arthritis Res Ther. 2008]

Review An overview of a novel, water-soluble undenatured type II collagen [J Am Coll Nutr. 2015]

CTLA4-Ig modifies dendritic cells from mice with collagen-induced arthritis to [J Autoimmun. 2010]

Kirenol exerts a potent anti-arthritic effect in collagen-induced arthritis I [Phytomedicine. 2012]

Review Type II collagen oral tolerance: mechanism and role in cc [Mod Rheumatol. 2009]

Momordica Charantia Peptide

> *J Agric Food Chem.* 2017 Oct 25;65(42):9266-9274. doi: 10.1021/acs.jafc.7b03583. Epub 2017 Oct 17.

Gastro-Resistant Insulin Receptor-Binding Peptide from *Momordica charantia* Improved the Glucose Tolerance in Streptozotocin-Induced Diabetic Mice via Insulin Receptor Signaling Pathway

Hsin-Yi Lo, Chia-Cheng Li, Feng-Yuan Chen, Jaw-Chyun Chen¹, Chien-Yun Hsiang, Tin-Yun Ho²

Affiliations + expand

PMID: 28994284 DOI: 10.1021/acs.jafc.7b03583

to in **Glucose Tolerance in Streptozotocin-Induced Diabetic Mice via Insulin Receptor Signaling Pathway**

> *Food Chem.* 2008 Nov 15;111(2):415-20. doi: 10.1016/j.foodchem.2008.04.006. Epub 2008 Apr 9.

Purification and characterisation of a hypoglycemic peptide from *Momordica Charantia* L. Var. abbreviat Ser

Xiaoqing Yuan¹, Xiaohong Gu², Jian Tang³

Affiliations + expand

PMID: 26047444 DOI: 10.1016/j.foodchem.2008.04.006



KEYWORDS: *Momordica charantia*; diabetes; gastro-resistant peptide; hypoglycemia; insulin receptor

> *J Clin Diagn Res.* 2016 Apr;10(4):BF01-4. doi: 10.7860/JCDR/2016/18161.7653. Epub 2016 Apr 1.

Evaluation of Protein Kinase C β and PPAR γ Activity in Diabetic Rats Supplemented with *Momordica charantia*

Swetha Chandru¹, Prashant Vishwanath², Devananda Devegowda³, Suresha Nagaraja Ramasamudra⁴, Akila Prashant², Basavanagowdappa Hathur⁵

Affiliations + expand

PMID: 27190792 PMCID: PMC4866090 DOI: 10.7860/JCDR/2016/18161.7653

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> *Food Chem.* 2016 Aug 1;204:298-305. doi: 10.1016/j.foodchem.2016.02.135. Epub 2016 Feb 24.

Identification of the bioactive and consensus peptide motif from *Momordica charantia* insulin receptor-binding protein

Hsin-Yi Lo¹, Chia-Cheng Li¹, Tin-Yun Ho², Chien-Yun Hsiang³

Affiliations + expand

PMID: 26988505 DOI: 10.1016/j.foodchem.2016.02.135

cornucopia of health: a review [Curr Mol Med. 2011]

Anti Allergy Product

> [Biochemistry](#). 2001 Aug 21;40(33):9828-35. doi: 10.1021/bi010936c

A novel family of hairpin peptides that inhibits IgE activity by binding to the high-affinity receptor

G R Nakamura ¹, M A Starovasnik, M E Reynolds, H B Lowman

Affiliations + expand

PMID: 11502176 DOI: 10.1021/bi010936c

> [Mol Biosyst](#). 2013 Nov;9(11):2853-9. doi: 10.1039/c3mb70286c.

An IgE receptor mimetic peptide (PepE) protects mice from IgE mediated anaphylaxis

Joseph S Zhou ¹, Annamaria Sandomenico, Valeria Severino, Oliver T Oettgen, Menotti Ruvo

Affiliations + expand

PMID: 24056872 PMCID: PMC3820499 DOI: 10.1039/c3mb70286c

Review > [Allergy](#). 1997 Dec;52(12):1155-69. doi: 10.1111/j.1398-9995.1997.tb02518.x.

Peptide blocking of IgE/receptor interaction: possibilities and pitfalls

B A Helm ¹, A C Spivey, E A Padlan

Affiliations + expand

PMID: 9450133 DOI: 10.1111/j.1398-9995.1997.tb02518.x

> [J Biol Chem](#). 2010 May 14;285(20):15314-23. doi: 10.1074/jbc.M110.104281. Epub 2010 Mar 19.

The signal peptide of the IgE receptor alpha-chain prevents surface expression of an immunoreceptor tyrosine-based activation motif-free receptor pool

Barbara Platzer ¹, Edda Fiebiger

Affiliations + expand

PMID: 20304923 PMCID: PMC2865261 DOI: 10.1074/jbc.M110.104281

Chunpu Resveratrol Literature

> *Experientia*. 1987 Oct 15;43(10):1110-1. doi: 10.1007/BF01956052.

A novel fibrinolytic enzyme (nattokinase) in the vegetable cheese Natto; a typical and popular soybean food in the Japanese diet

H Sumi ¹, H Hamada, H Tsushima, H Mihara, H Muraki

Affiliations + expand

PMID: 3478223 DOI: 10.1007/BF01956052

Randomized Controlled Trial > *Sci Rep*. 2015 Jun 25;5:11601. doi: 10.1038/srep11601

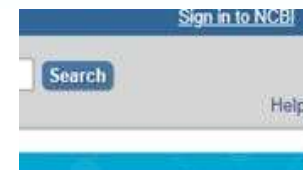
A single-dose of oral nattokinase potentiates thrombolysis and anti-coagulation profiles

Yuko Kurosawa ¹, Shinsuke Nirengi ¹, Toshiyuki Homma ¹, Kazuki Esaki ², Mitsuhiro Ohta ³, Joseph F Clark ⁴, Takafumi Hamaoka ¹

Affiliations + expand

PMID: 26109079 PMCID: PMC4479826 DOI: 10.1038/srep11601



PMID: 28315071 DOI: 10.1007/164_2017_7



Food and Chemical Toxicology
Volume 61, November 2013, Pages 215-226



Antioxidant effects of resveratrol in cardiovascular, cerebral and metabolic diseases

Albino Carrizzo ^a, Maurizio Forte ^b, Antonio Damato ^a, Valentina Trimarco ^c, Francesco Salzano ^d, Michelangelo Bartolo ^e, Anna Maciag ^f, Annibale A. Puca ^{f, g}, Carmine Vecchione ^{a, g}  

View Utilizing Delta Opioid Receptors and tides for [CNS Neurol Disord Drug Targets...]
a opioid receptor and its peptide: a receptor-
id neuroprotection. [Int J Mol Sci. 2013]
a opioid receptors stimulation with [D-Ala2,
au5] enkephalin does no [Neurosci Lett. 2007]
Protective effects of the delta opioid peptide [D-
Ala2, D-Leu5]enkeph [CNS Neurosci Ther. 2012]

Anti-gout Peptides

> Arthritis Res Ther. 2009;11(5):R151. doi: 10.1186/ar2827. Epub 2009 Oct 8.

Melanocortin peptides inhibit urate crystal-induced activation of phagocytic cells

Franco Capsoni¹, Anna Maria Ongari, Eva Reali, Anna Catania

Affiliations + expand

PMID: 19814819 PMCID: PMC2787256 DOI: 10.1186/ar2827

[Free PMC article](#)

Abstract

Introduction: The melanocortin peptides have marked anti-inflammatory potential, primarily through inhibition of proinflammatory cytokine production and action on phagocytic cell functions. Gout is an acute form of arthritis caused by the deposition of urate crystals, in which phagocytic cells and cytokines play a major pathogenic role. We examined whether alpha-melanocyte-stimulating hormone (alpha-MSH) and its synthetic derivative (CKPV)2 influence urate crystal-induced monocyte

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REVIEW

Peptide-based therapies for arthritis

Marina Ali &
Nicholas Manolios[†]

[†]Author for correspondence
University of Sydney,
Rheumatology Dept,
Westmead Hospital,
Westmead 2145, Sydney,
Australia
Tel.: +61 298 458 099;
Fax: +61 298 458 317;
nickm@westgate.wh.usyd.
edu.au

In this review we focus on peptide and peptidomimetic-based approaches in the treatment of inflammatory arthritis and outline what is in the pipeline for future therapeutic possibilities. Since immunomodulation is the key process influencing an inflammatory response, this review highlights strategies aimed at interfering with the immune synapse. Peptides used to block cytokines, and newer promising therapies on the horizon for arthritis are discussed. Finally, we review the mechanistic-based strategy used to develop transmembrane peptides and outline their potential use in arthritis and other fields of medicine.

To date, therapeutic drugs used in arthritis have largely consisted of the use of small molecules stability and the high costs involved with manufacturing. However, trends are changing and

Lipid-lowering Peptides

JCI The Journal of Clinical Investigation

Effect of gastric inhibitory polypeptide on plasma levels of chylomicron triglycerides in dogs.

T Wasada, ... , B Howard, R H Unger

J Clin Invest. 1981;68(4):1106-1107. <https://doi.org/10.1172/JCI110335>.

Research Article

To determine whether gastric inhibitory polypeptide (GIP) promotes the clearance of chylomicron triglycerides (TG) from the circulation in dogs, chyle collected from donor dogs via a thoracic duct fistula was infused at a rate of 2 ml/min i.v. into normal recipient dogs during an infusion of either porcine GIP (1 microgram/kg per h) or saline as a control. In the GIP-infused dogs the rise in plasma TG was significantly below that of the control animals [mean peak of 36 +/- 4 mg/dl vs. 82 +/- 18 mg/dl (P less than 0.05)]. It is concluded that GIP exerts an effect upon the removal of chylomicron TG from the blood. The results suggest that GIP may play a physiologic role in the disposition of ingested fat.

Abstract
Cyp7a1^{-/-} mice. Current studies suggest that increased Cyp7a1 expression and bile acid synthesis and activation of FXR, whereas reduced bile acid synthesis aggravates MCD diet-induced hepatic inflammation and cholesterol homeostasis is important for protecting against liver injury and nonalcoholic fatty liver disease.

KEYWORDS: Takeda G protein-coupled receptor 5; bile acid; farnesoid X receptor; nuclear receptor



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Section V: The Incretin Pathway

Gastric Inhibitory Polypeptide and Glucagon-Like Peptide-1 in the Pathogenesis of Type 2 Diabetes

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[> Diabetes.](#) 1979 Dec;28(12):1141-2. doi: 10.2337/diab.28.12.1141.

Gastric inhibitory polypeptide enhanced lipoprotein lipase activity in cultured preadipocytes

R H Eckel, W Y Fujimoto, J D Brunzell

PMID: 510813 DOI: 10.2337/diab.28.12.1141

Abstract

Fat feeding stimulated the release of gastric inhibitory polypeptide (GIP) without concomitant insulin secretion. Since antilipolytic effects of GIP have been demonstrated and the uptake of triglyceride fatty acid by adipose tissue postprandially is a process reciprocally regulated with lipolysis, a stimulatory role of GIP on adipose tissue lipoprotein lipase activity may be present. After cultured preadipocytes were incubated for 2 h with GIP, the release of lipoprotein lipase activity into the culture medium and the total cellular activity present in acetone-ether powders of cells were measured. GIP stimulated significant increases in the lipoprotein lipase activity released into the culture medium and in cells. A dose response relationship was strongest for the effect of GIP on the enzyme activity in extracts of acetone-ether powders of the cells. The increased lipoprotein lipase activity produced by GIP could provide a mechanisms for clearance of chylomicron triglyceride after

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Amyloidin Literature

> Int J Biol Macromol. 2020 Aug 1;156:938-948. doi: 10.1016/j.ijbiomac.2020.03.085.
Epub 2020 Mar 12.

A bioactive polypeptide from sugarcane selectively inhibits intestinal sucrase

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Affiliations + expand

PMID: 32173443 DOI: 10.1016/j.ijbiomac.2020.03.085

Abstract

Human sucrase enzyme is a key therapeutic target for type 2 diabetes. While sugarcane sucrase inhibitor (sucinh) modulates invertase activity thereby accumulates sucrose. Molecular level understanding of sucinh towards mammalian α -glucosidases is scarce. The interaction of sucinh with human sucrase was identified and the association of these proteins was confirmed using co-




International Journal of
Molecular Sciences



Article

Bioactive Peptides from Germinated Soybean with Anti-Diabetic Potential by Inhibition of Dipeptidyl Peptidase-IV, α -Amylase, and α -Glucosidase Enzymes

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JDI Journal of Diabetes Investigation
Official Journal of the Asian Association for the Study of Diabetes



Original Article |  Open Access |    

Peptide modulators of alpha-glucosidase

Irena Roskar, Peter Molek, Miha Vodnik, Mateja Stempelj, Borut Strukelj, Mojca Lunder 

First published: 03 April 2015 | <https://doi.org/10.1111/jdi.12358> | Citations: 12



Sugar Protein **Brazzein**

Properties of Brazzein

High Sweetness: Brazzein is approximately 2000 times sweeter than sucrose (table sugar), providing a clean and sugar-like taste without lingering bitterness or aftertaste.

Heat Stability: Brazzein retains its sweetness even under high temperatures, making it suitable for baking and cooking applications.

pH Stability: Brazzein maintains its sweetness across a wide pH range, both in acidic and alkaline environments, allowing its use in acidic beverages and alkaline food products.

Water Solubility: Brazzein readily dissolves in water, facilitating its incorporation into liquid foods and beverages.

Safety: Brazzein has been granted Generally Recognized as Safe (GRAS) status by the U.S. Food and Drug Administration (FDA), affirming its safety as a food additive.



Metal Peptides for Mining

Direction

1. Produce iron particles, which are like fine iron powder on a tape, and then coat the iron particles with peptides to become peptide iron particles
2. Grind the ore into fine powder, expose the metal surface, and then add water
3. Add the peptide iron particles into the mineral powder water and stir for a few minutes. The metal will be tightly wrapped by the peptide, that is, it will be wrapped by the peptide iron particles.
4. Use an electrified electromagnet to adsorb and collect the peptide iron particles. Of course, the metal is also collected together.
5. The metal is separated from other minerals, that is, the metal and peptide iron particles are enriched
6. After decomposing the peptide with a special solution, the metal and iron particles are naturally separated.
7. Use the large electric magnet again to absorb the independent iron particles away, and the only thing left is the metal to be collected.

The surface structure of each metal molecule is different. Based on this characteristic, we choose peptides with opposite shapes to bind to the metal. This can produce extremely strong adhesion and is used for metal mining.

Process Characteristics

- Can be used for precious metals, lithium, cobalt, rare earths, and other metals
- Mining recovery rate is high 90%-99%, existing tailings may be worth processing
- Does not pollute the environment. Only water is used for physical separation. There is no chemical reaction and no chemicals are used. Water and iron particles can be recycled.
- The reaction is fast, more direct and effective than fire method and chemical method.
- Metal specificity, easy separation of different metals
- Can effectively, easily and quickly remove heavy metal pollution in water or soil
- Iron peptide particles can be mass-produced at a reasonable price



Metal Peptides for Mining

Advantages

- Cost-Effective Peptide Synthesis and Expanding Applications
- Overcoming Cost Barriers in Peptide Production
- Simplified and Enhanced Peptide Iron Microparticle Coating
- Expanding Production Capabilities
- Global Market Reach

AntiAgingPhD's cost-effective peptide synthesis technology, simplified production processes, and expanding product portfolio position the company at the forefront of peptide innovation. With its commitment to quality, sustainability, and global reach, **AntiAgingPhD** is poised to revolutionize various industries and address critical challenges in metal extraction and purification.

Development Process

AntiAgingPhD's metal peptide development process involves a series of carefully orchestrated steps to produce high-quality, cost-effective peptide-based solutions for metal extraction and purification.

1. Target Metal Selection and Yeast Engineering
2. Iron Microparticle Synthesis
3. Metal Peptide Coating and Testing
4. Scale-up and Industrialization
5. Continuous Improvement and Optimization
6. Iron Microparticle Recycling and Sustainability

Advanced recycling techniques are implemented to minimize waste generation, promote sustainability, and further reduce production costs.



Endotoxin Removal Peptide Market Analysis

Harnessing Endotoxin Peptides to Enhance Wine Marc Utilization in Feed: Unveiling Market Potential

Wine marc, a byproduct generated during wine production, is a rich source of protein, fat, and fiber. However, its substantial endotoxin content, particularly lipopolysaccharide (LPS) from Gram-negative bacteria, poses health risks to animals when used in feed.

The potential market advantages of utilizing endotoxin peptides to enhance wine marc utilization in feed are compelling:

- **Improved Animal Health and Performance:** Endotoxin peptides can counteract the negative effects of endotoxins on animal health, boosting their immune system, disease resistance, growth, and reproduction.
- **Reduced Feed Costs:** Wine marc, a relatively inexpensive feed ingredient, can lower overall feed costs when its inclusion rate is increased.
- **Minimized Environmental Pollution:** Improper disposal of wine marc can lead to environmental contamination. Many wineries incur costs associated with managing this substantial waste stream.

Driving Factors for Adoption

- **Supportive Government Policies:** Governmental policies promoting feed safety and environmental protection can create a favorable environment for endotoxin peptide utilization.
- **Feed Industry Recognition:** Recognizing the potential value of endotoxin peptides, feed companies are actively developing and promoting these products.
- **Growing Demand from Livestock Producers:** Driven by the desire to enhance animal health, reduce feed costs, and minimize environmental impact, livestock producers are increasingly seeking endotoxin peptide solutions.

Conclusion

The potential market for endotoxin peptides in enhancing wine marc utilization in feed is vast. As technology advances and market awareness grows, endotoxin peptides are poised to play a significant role in the feed industry and animal husbandry. By adding **AntiAgingPhD's** Longevity and Growth proteins to the feed would further transforming a waste product into a valuable resource.



Thank you



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