



人参牡蛎肽压片糖果

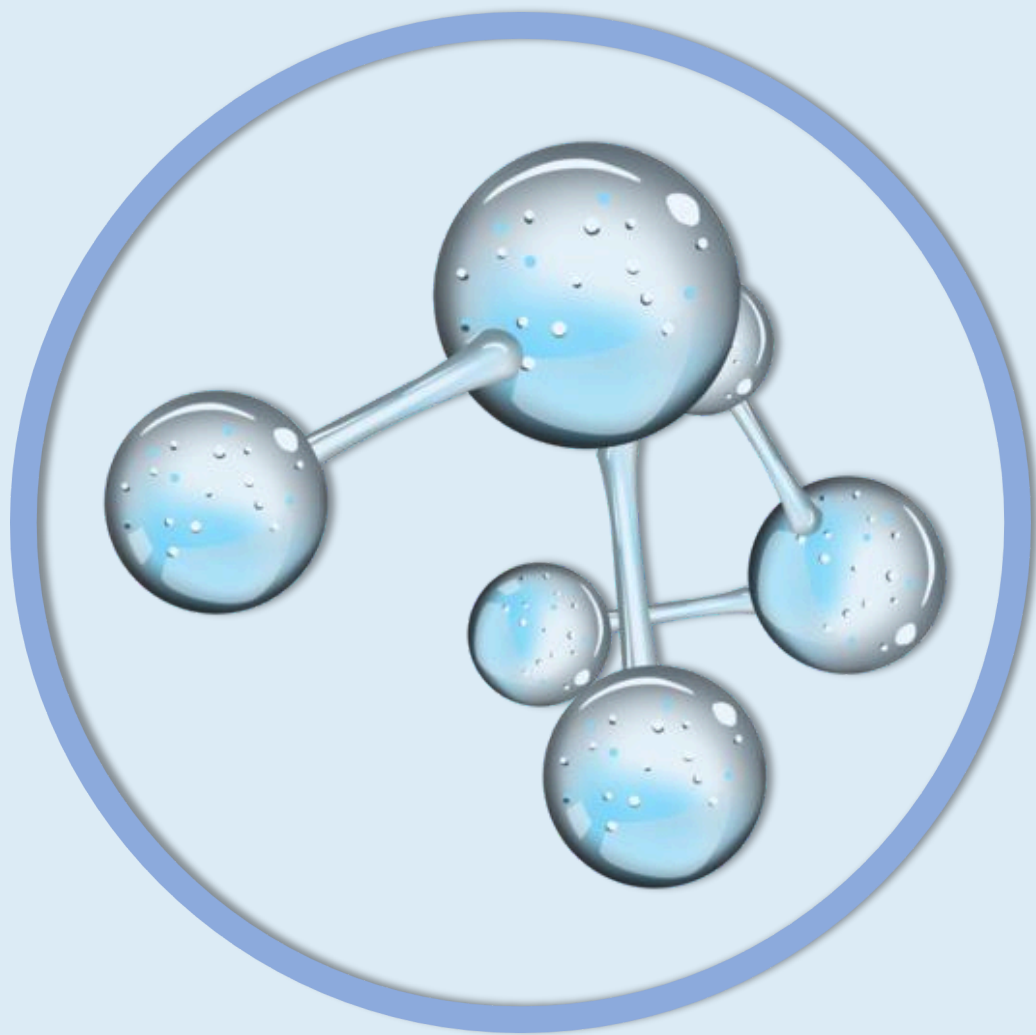
GINSENG OYSTER PEPTIDE TABLET CANDY

药食同源 健康养生



GINSENG OYSTER PEPTIDE TABLET CANDY

人参牡蛎肽 压片糖果



肽

Peptides

引领健康生活

Leading a healthy lifestyle

人可以活多久?

How long can humans live?

分化

differentiation

构成

constitute

组合

combine

组成

compose

细胞

cell

组织

organization

器官

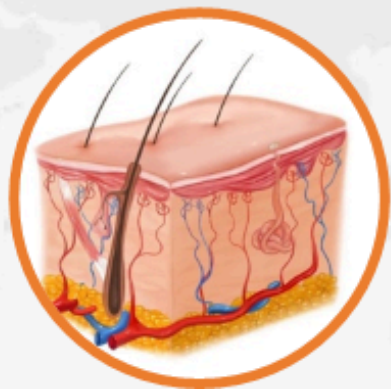
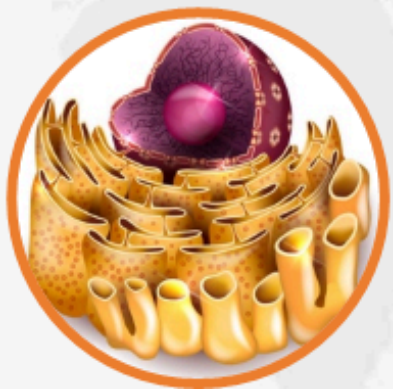
organ

系统

system

人体

human body



细胞的寿命和分裂次数决定了人的寿命

The lifespan and number of divisions of cells determine human lifespan.

生命衰亡的秘密

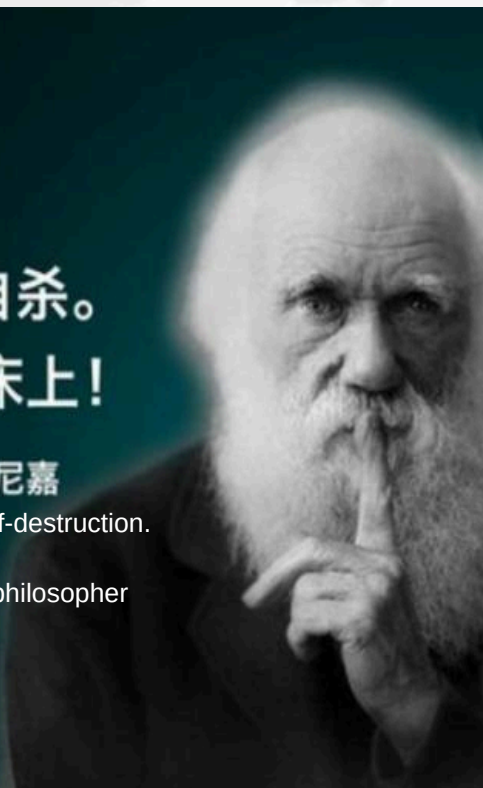
The secret of life's decline and aging

人类不是自然死亡，而是慢性自杀。
有99%的人是因为疾病死在病床上！

——罗马哲学家赛尼嘉

Humans do not die a natural death, but rather a slow, chronic self-destruction.
99% of people die from disease in hospital beds.

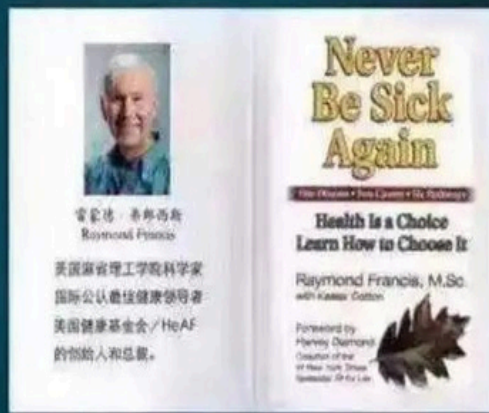
— Seneca, Roman philosopher



Why do people get sick?

人为什么会生病

WHY DO WE FALL SICK 200年来最重要的医学发现——美国纽约时报



人类只有一种疾病
HUMAN BEINGS ONLY HAVE 1 SICKNESS

细胞故障
CELL FAILURE

细胞的健康决定了我们的健康

The health of our cells determines our overall health.

如何拯救健康

How to restore health



世界卫生组织WHO提出：
治愈疾病的最有效途径就是

修复细胞，改善细胞，激活细胞。

必须补充合成细胞的物质：

——**活性肽**

The World Health Organization (WHO) states: the most effective way to cure disease is to repair cells, improve cells, and activate cells.

It is essential to supplement the substances needed for cell synthesis:

—— active peptides

肽的发现

The discovery of peptides



1902年，伦敦大学的生理学家 Bayliss 在人体内首次发现了多肽物质。

In 1902, the physiologist Bayliss from the University of London first discovered peptide substances in the human body.



1965年，我国科学家完成了牛结晶胰岛素的合成，这是世界上第一次人工合成多肽物质。

In 1965, Chinese scientists successfully synthesized bovine crystalline insulin, marking the world's first artificial synthesis of a peptide substance.



1997年，吴庆林进入肽物质研究，极大的促进整个肽行业的高速发展。

In 1997, Wu Qinglin entered the field of peptide research, greatly promoting the rapid development of the entire peptide industry.

肽与诺贝尔奖

Peptides and the Nobel Prize

美国尤·格林博士说：肽几乎被用于治疗任何疾病，无药可比。

美国生物学家克拉兹博士——小分子活性肽疗法，将至少提高人类寿命20年。

美国著名华裔学家，诺贝尔奖获得者，朱棣文博士也说过21世纪的生物工程就是研究基因工程与蛋白质工程，研究蛋白质就是研究肽。

Dr. E. Green (USA) said: peptides are used in the treatment of almost any disease, and no drug can compare.

Dr. Kratz, an American biologist, stated that small-molecule active peptide therapy could extend human lifespan by at least 20 years.

Dr. Steven Chu, a famous Chinese-American scientist and Nobel Prize laureate, also said: "The bioengineering of the 21st century is the study of genetic engineering and protein engineering, and studying proteins is essentially studying peptides."

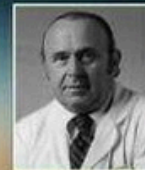
史无前例的诺贝尔奖



Vincent DuVigneaud



Roger Tsien



Andrew V. Schally



Rosalyn Yalow



Bruce Bevan Rolland



Stanley Cohen



Rita Levi-Montalcini



Aaron Ciechanover



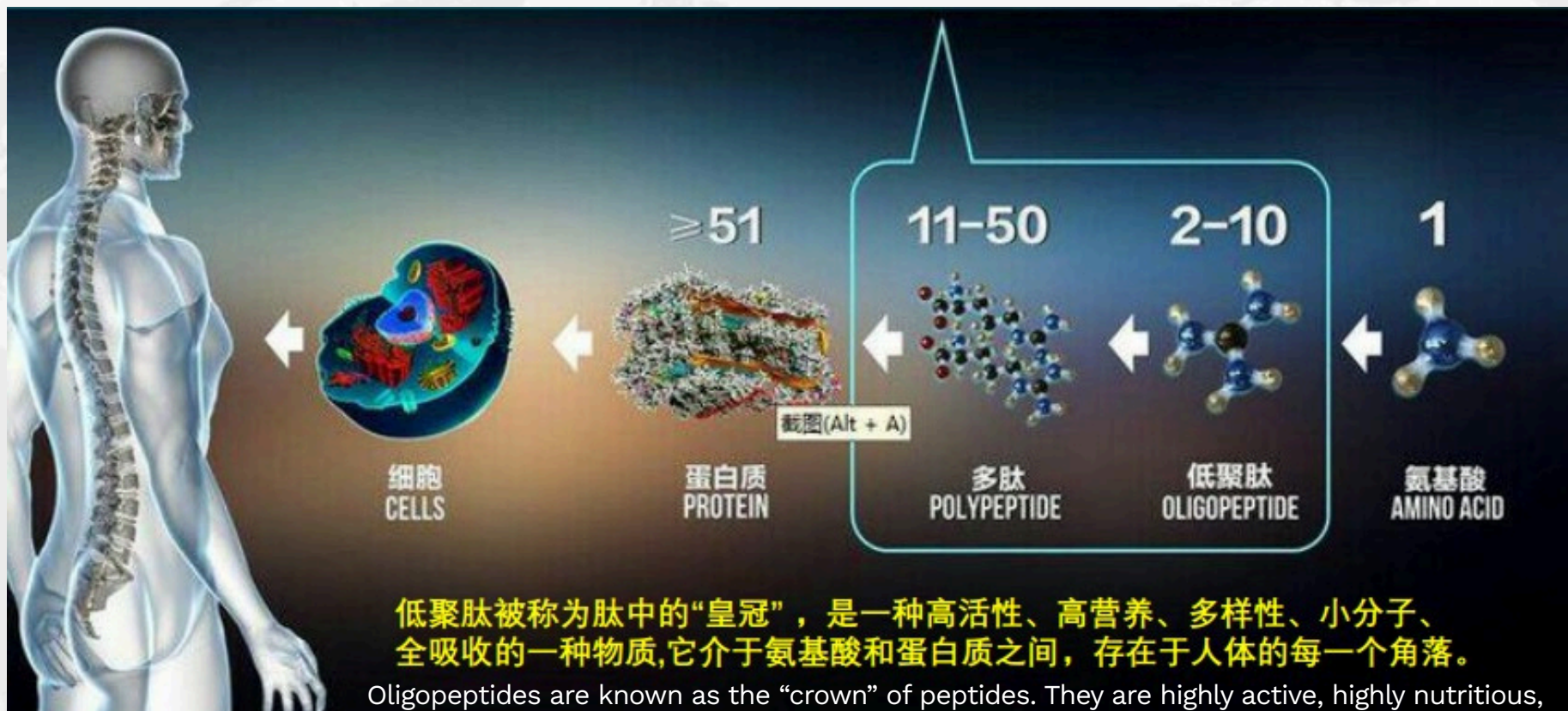
Aurelio Heredia



Ivan Ross

什么是肽

What are peptides?



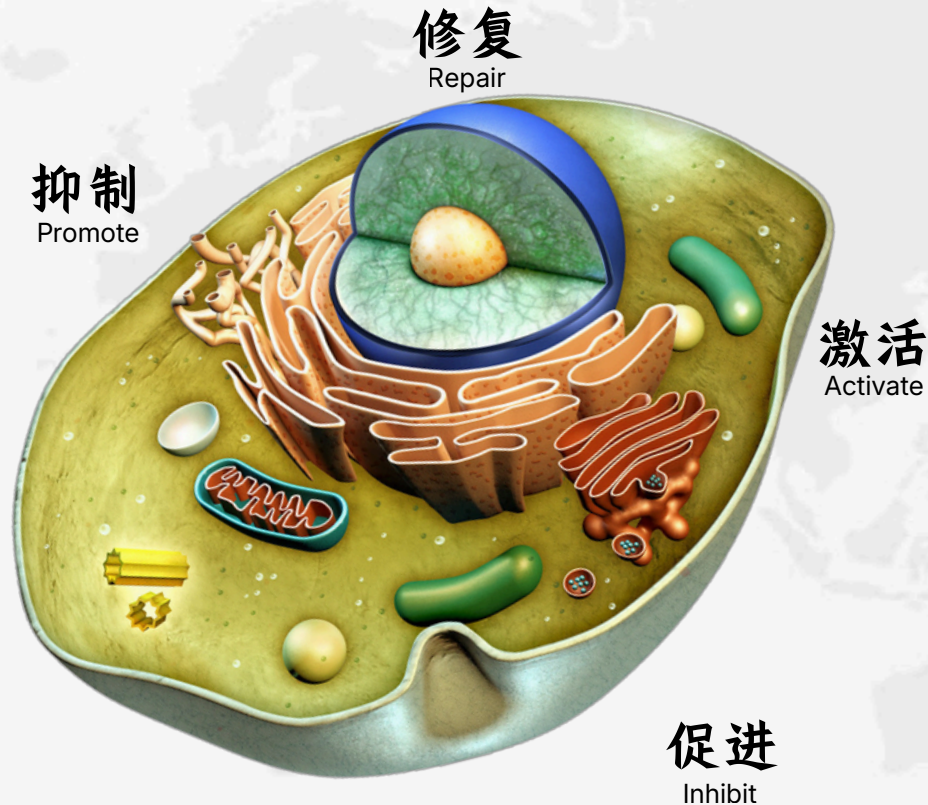
Oligopeptides are known as the “crown” of peptides. They are highly active, highly nutritious, diverse, small-molecule substances that are fully absorbable. Positioned between amino acids and proteins, they exist in every corner of the human body.

小分子活性肽是介于氨基酸与蛋白质之间一种生化物质，是一个蛋白质的片段。

Small-molecule active peptides are biochemical substances that lie between amino acids and proteins, and they are fragments of proteins.

肽对细胞的作用

Effects of peptides on cells



- **抑制——抑制细胞的变性**
Inhibition — Inhibits cell degeneration
- **激活——激活细胞活性**
Activation — activates cellular activity
- **修复——修复人体变性细胞**
Repair — repairs damaged or denatured cells in the body
- **促进——促进维持细胞的正常新陈代谢**
Promotion — promotes and maintains normal cellular metabolism

医学界三次革命

Three revolutions in the medical field

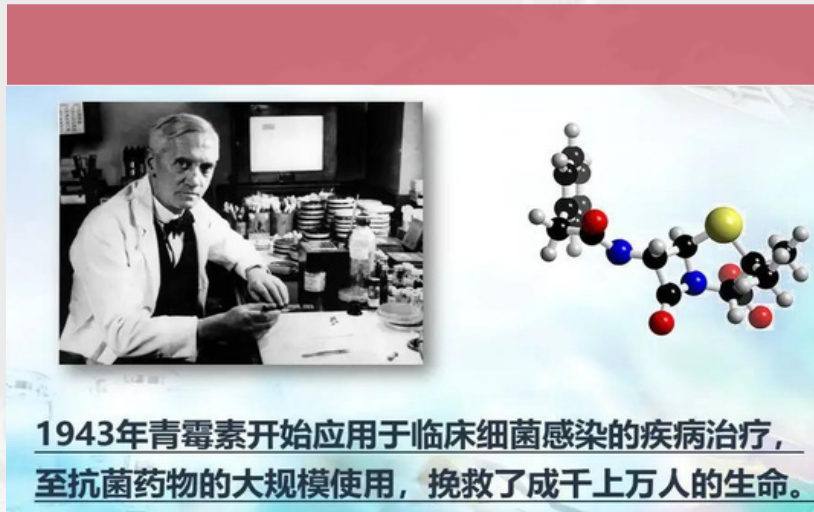


第一次革命

天花疫苗的应用人类战胜了传染性疾病

First revolution

The application of the smallpox vaccine enabled humanity to overcome infectious diseases.

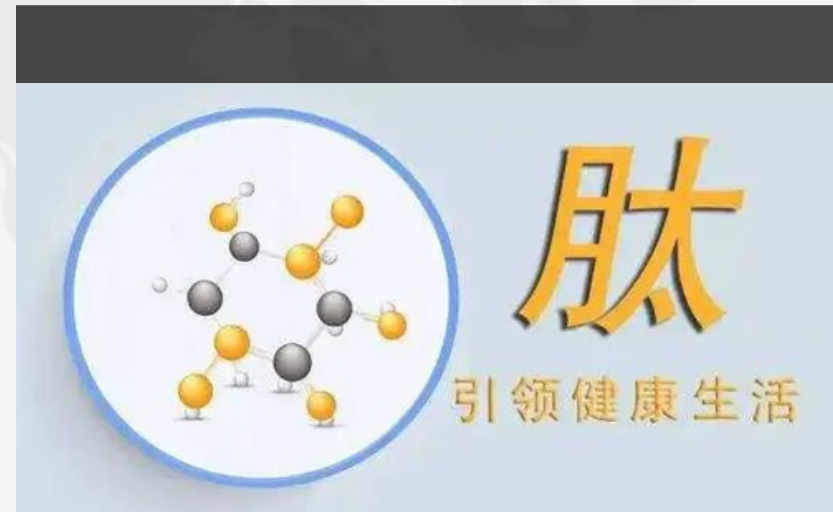


第二次革命

青霉素的诞生人类抵御了结核病等细菌感染性疾病

Second revolution

The discovery of penicillin allowed humans to combat tuberculosis and other bacterial infectious diseases.



第三次革命

生物活性肽的发现将改善人类亚健康 and 慢性病

Third revolution

The discovery of bioactive peptides may help improve human sub-health conditions and chronic diseases.

肽与慢性病

Peptides and chronic diseases

缺肽会导致人体上百种疾病，加速死亡

A lack of peptides can lead to hundreds of diseases in the human body and accelerate death.



免疫低下 机能退化
细胞突变 疾病丛生
加速衰老 提前死亡



肽的充足与否，决定生命体的健康与否

Whether peptides are sufficient or not determines the health of a living organism.

现代人都缺肽

Modern people are generally deficient in peptides



年龄因素 Age Factor

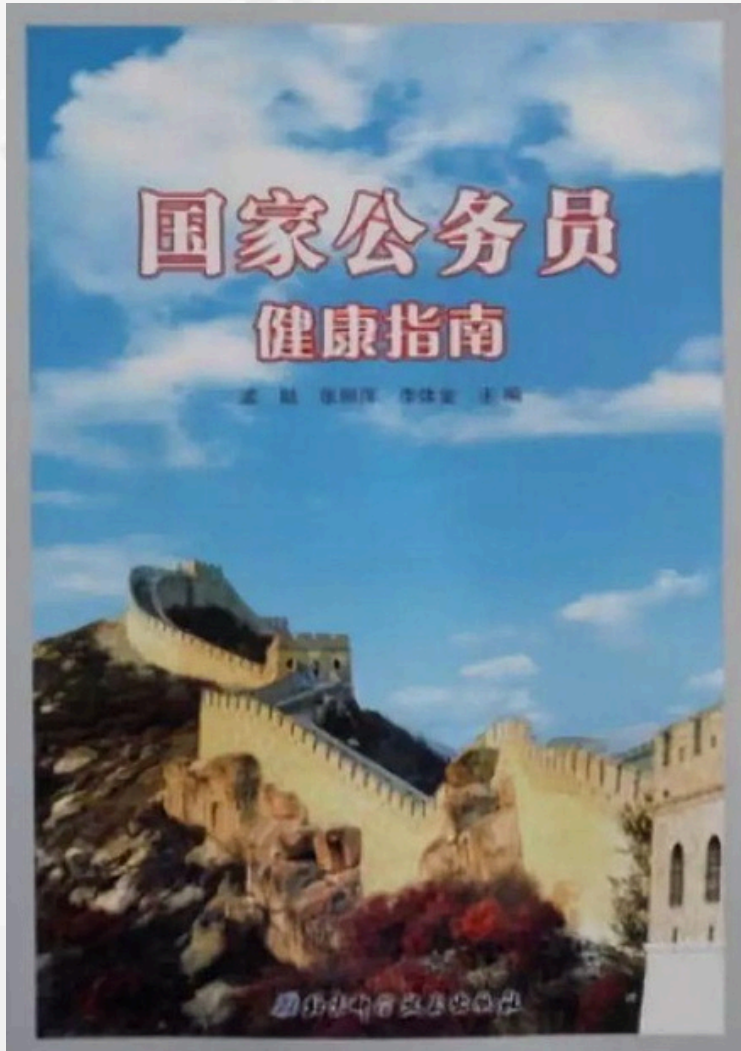
疾病因素 Disease Factor

环境污染 Environmental Pollution

生活方式 Lifestyle Factors

肽的国家政策

National Policies on Peptides



《国家公务员健康指南》：
已将生物活性肽列为预防慢性病的
优选方案之一。

“National Civil Servants Health Guidelines”:
Bioactive peptides have been listed as one of
the preferred options for preventing
chronic diseases.



中国胶原蛋白肽之父

Father of Collagen Peptides in China



- **太爱肽集团创始人**
Founder of the Tai Ai Peptide Group
- **中国胶原蛋白肽之父中国肽产业核心技术持有者**
Father of China's collagen peptide industry; core technology holder in China's peptide industry
- **中央电视台《实话实说》栏目特邀嘉宾**
Invited guest on CCTV's program "Tell It Like It Is"
- **2018年首届中国健康年会“终身成就奖”**
Recipient of the "Lifetime Achievement Award" at the 2018 First China Health Annual Conference

“谁都无法抗拒衰老，我们用肽可以将人类衰老的脚步放慢，放慢，在放慢！”

"No one can resist aging, but with peptides, we can slow down the pace of human aging—slow it down, slow it down, and slow it down even more!"

自有专利技术

Proprietary patented technology.

自有单物质抓取和全物质链提取技术

Proprietary single-substance extraction and full substance-chain extraction technology.



低含盐量的多肽生产方法
Method for producing low-salt-content polypeptides



一种从葵花盘中提取小分子活性物质的方法
A method for extracting small-molecule bioactive substances from sunflower receptacles (sunflower heads).



一种海参肽的提取方法
A method for extracting sea cucumber peptides.



一种牡蛎肽的提取方法
A method for extracting oyster peptides.



一种植物小分子提取物的制备机组
A production system for preparing plant-derived small-molecule extracts.

专项研发 科学配比 私人订制

Specialized research and development · Scientific formulation · Personalized customization

中医师、药师、营养师

Traditional Chinese Medicine practitioners, pharmacologists, and nutritionists.



生产基地

Production base

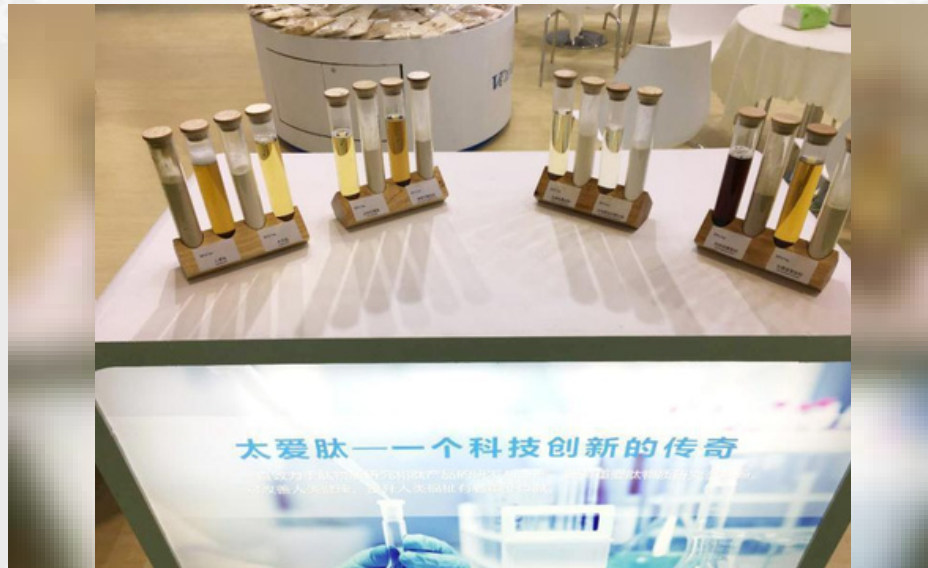


河北大厂、辽宁大连、山东菏泽三大生产基地

Three major production bases: Dachang, Hebei; Dalian, Liaoning; Heze, Shandong

科研成果

Scientific achievements.



300多项科研成果
Over 300 scientific research achievements

国家权威机构检测—品质安全有保障
Tested by national authoritative institutions — quality and safety guaranteed.

专业检测机构检测报告 江南大学检测报告

Test reports from professional testing institutions
Jiangnan University test report



江南大学分析测试中心
Analyze & Testing Center
Jiangnan University
检测报告
ANALYZING AND TESTING REPORT

报告编号: NAL17001
样品名称: 牡丹肽
委托单位: 江苏大康生物工程技术有限公司
检测日期: 2017年4月12日

报告编号: L01140
样品名称: 牡蛎肽
委托单位: 江苏大康生物工程技术有限公司
检测日期: 2017年4月12日

报告编号: L110007
样品名称: 牛骨肽
委托单位: 江苏大康生物工程技术有限公司
检测日期: 2017年4月12日

牡丹肽检测报告
Peony peptide test report

牡蛎肽检测报告
Oyster peptide test report

牛骨肽检测报告
Bovine bone peptide test report

PONY
MA
检测报告
(Testing Report)

报告编号: 2017030048
样品名称: 胶原蛋白肽
委托单位: 江苏大康生物工程技术有限公司
检测日期: 2017年3月12日

报告编号: 2017030049
样品名称: 海参肽
委托单位: 江苏大康生物工程技术有限公司
检测日期: 2017年3月12日

胶原蛋白肽检测报告
Collagen peptide test report

海参肽检测报告
Sea cucumber peptide test report

PONY
MA
检测报告
(Testing Report)

报告编号: 2017030050
样品名称: 鳕鱼肽
委托单位: 江苏大康生物工程技术有限公司
检测日期: 2017年3月12日

报告编号: 2017030051
样品名称: VC泡腾片
委托单位: 江苏大康生物工程技术有限公司
检测日期: 2017年3月12日

鳕鱼肽检测报告
Cod peptide test report

VC泡腾片检测报告
Vitamin C effervescent tablet test report



人参牡蛎肽压片糖果

精选人参粉和牡蛎低聚肽粉同时添加肉苁蓉粉和黄精肽粉，经自有专利技术精制而成，营养价值全面，可被人体快速吸收利用。

小分子易吸收，作用全面，对人体气血进行快速补充，对调理机能起到全方位的作用。

GINSENG OYSTER PEPTIDE TABLET CANDY

Carefully selected ginseng powder and oyster oligopeptide powder, with added Cistanche powder and Polygonatum (Solomon's seal) peptide powder, refined using proprietary patented technology. It offers comprehensive nutritional value and can be quickly absorbed and utilized by the human body.

Small molecules are easily absorbed and provide broad benefits. They help rapidly replenish the body's qi and blood, and play an all-round role in regulating bodily functions.

百草之王——人参

King of all herbs — Ginseng.

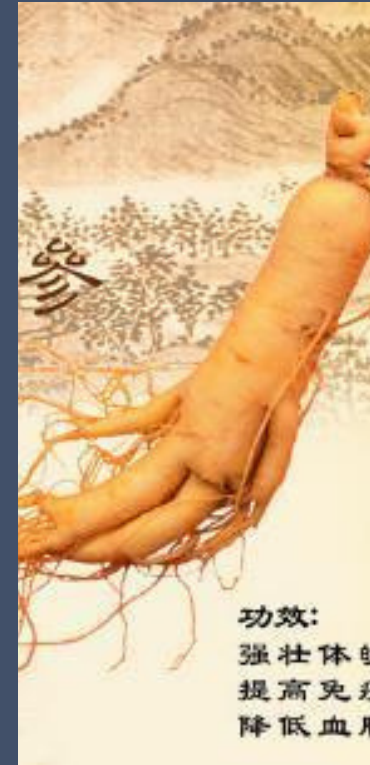
补气 Tonify Qi

《神农本草经》人参的精髓：“人参，味甘微寒，主补五脏，安精神，定魂魄，止惊悸，除邪气，明目，开心益智。久服，轻身延年。

《本草纲目》中记载：“人参治男女一切虚症，”。

According to Shennong Ben Cao Jing, the essence of ginseng is described as: “Ginseng, sweet in taste and slightly cold in nature, primarily nourishes the five organs, calms the spirit, stabilizes the soul and consciousness, relieves palpitations, eliminates pathogenic factors, improves vision, enhances mental clarity and wisdom. Long-term use lightens the body and extends lifespan.”

In Compendium of Materia Medica (Ben Cao Gang Mu), it is recorded: “Ginseng treats all types of deficiency syndromes in both men and women.”



中国人参，国之瑰宝

Chinese ginseng, a national treasure

世界掀起

The world sets off

“人参热”

Ginseng craze

微量元素人参多

Trace elements and ginseng polysaccharides

糖抗氧化剂维生

Antioxidants and vitamins

素18种氨基酸100

18 types of amino acids

多种人参皂苷

Various ginsenosides



在瑞典：人参被定义为 万能药； 在英国：人参被喻为“生命之根”；
In Sweden, ginseng is defined as a universal remedy.

在法国：喝参茶逐渐成为新的浪漫；
In France, drinking ginseng tea is gradually becoming a new romantic trend.

在德国：人参素有“万药之王”的美誉；
In Germany, ginseng is praised as the “king of all medicines.”

在韩国：从小吃人参弥补了吃肉少带来的营养不良；
In South Korea, people have consumed ginseng from a young age to make up for nutritional deficiencies caused by low meat intake.

在日本：人参素有“生药之王”“未病之药”的美称；
In Japan, ginseng is known as the “king of herbal medicine” and the “medicine of prevention before illness.”

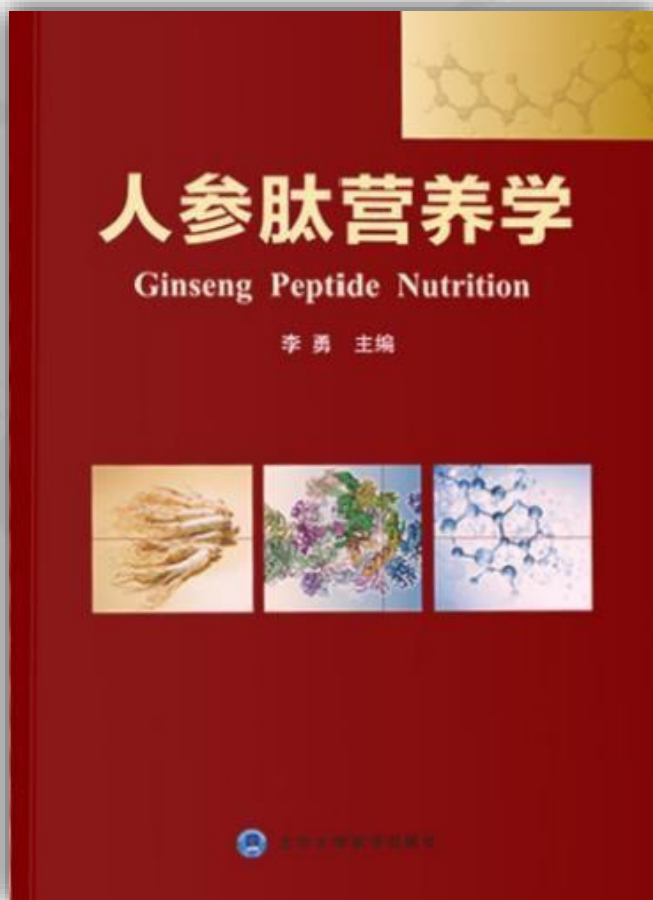
在美国：500万人吃人参；3500家健康食品店出售人参。
In the United States, 5 million people consume ginseng, and it is sold in over 3,500 health food stores.

用数据说话

《人参肽营养学》

Use data to speak

Nutritional Science of Ginseng Peptides



✓ 抗疲劳

缓解疲劳产生和加速疲劳消除

✓ 降血糖

抑制餐后血糖增高

✓ 防辐射

显著提高外周血白细胞数

✓ 清咽功效

降低棉球肉芽肿的净量
降低血清炎症因子水平

✓ 解酒护肝

减少翻正反射消失率和缩短昏睡期
显著降低血乙醇浓度
修复肝胆代谢功能,改善脂肪肝、酒精肝

✓ 抗氧化

显著减低脂质氧化产物和蛋白质氧化产物水平,提高抗氧化酶活力。

✓ 增强和改善性功能

提高血清中 NO 和睾酮浓度

✓ 提高免疫力

通过增强细胞免疫和体液免疫功能,提高特异性免疫功能。通过增强单核-巨噬细胞吞噬功能,提高非特异性免疫功能。

✓ 降血脂

保护血管内皮细胞,抗动脉粥样硬化

✓ 提高缺氧耐受力

延长常压缺氧存活时间
延长急性脑缺血性缺氧存活时间
延长亚硝酸钠中毒所致缺氧存活时间

营养价值

Nutritional value

人参肽解酒护肝实验

Ginseng peptide alcohol detoxification and liver-protective experiment

表 2.4 GOPs 对大鼠转棒停留时间的影响。

组别 (剂量 g/kg·bw)	动物数 (只)	体重 (g)	转棒停留时间 (min)	30min 未掉 只数
模型对照组	10	401.46±26.66	0.27 (0.20-0.35)	0
乳清蛋白 (0.2500)	10	422.10±11.53	4.27 (0.38-30.00)	3
GOPs (0.0625)	10	407.56±5.64	5.84 (0.45-18.20)	2
GOPs (0.1250)	10	399.40±18.18	11.10 (3.30-30.00) **	4
GOPs (0.2500)	10	402.12±29.71	23.62 (7.56-30.00) **	5
GOPs (0.5000)	10	420.80±22.80	11.09 (6.45-30.00) **	4

注: GOPs: 人参低聚肽; 体重以 $\bar{x} \pm s$ 形式表示; 与模型对照组相比差异具有统计学意义;

** $P < 0.01$, 由 *Kruskal-Wallis* 检验分析得出; 转棒停留时间用中位数 (P_{25} - P_{75}) 形式表示。

人参低聚肽可以降低血乙醇浓度, 降低大鼠醉酒率, 改善大鼠醉酒后肌肉力量及平衡协调能力, 增强肝组织乙醇脱氢酶、乙醛脱氢酶及细胞色素P450的活性。

Ginseng oligopeptides can reduce blood ethanol concentration, lower the intoxication rate in rats, and improve muscle strength as well as balance and coordination after alcohol intoxication. They also enhance the activity of alcohol dehydrogenase, acetaldehyde dehydrogenase, and cytochrome P450 in liver tissue.

提高免疫力实验

Immune enhancement experiment

吉林人参低聚肽对小鼠单核巨噬细胞吞噬功能的影响 ($\bar{x} \pm s, n = 10$)

组别	碳廓清指数 (α)	巨噬细胞吞噬鸡红细胞能力	
		吞噬率 (%)	吞噬指数
白对照组	8.58±0.23*#	19.98±3.37	0.42±0.06
青蛋白对照组	7.37±0.57	18.59±3.89	0.43±0.10
P 0.0375 g/kg BW	7.84±0.28*	21.40±3.76	0.44±0.09
P 0.075g/kg BW	7.76±0.49*	24.14±3.51*#	0.53±0.08*#
P 0.15g/kg BW	8.06±0.27*	22.48±3.85*#	0.49±0.11*
P 0.3 g/kg BW	7.89±0.37*	25.00±1.93*#	0.58±0.08*#
P 0.6 g/kg BW	8.27±0.58*#	21.10±2.57	0.48±0.06

↑ 12.23%

增强细胞免疫和体液免疫功能 → 提高特异性免疫功能
增强单核-巨噬细胞吞噬功能 → 提高非特异性免疫功能

Enhance cellular and humoral immune functions → Improve specific immune function
Enhance monocyte-macrophage phagocytic function → Improve non-specific immune function

——人参肽功效实验: 北大医学部数据

— Ginseng Peptide Efficacy Experiment: Data from Peking University School of Medicine

营养价值

Nutritional value

增加缺氧耐受力实验 Hypoxia tolerance enhancement experiment

组别	剂量	存活时间 (min)
空白对照组	0.000	36.67±3.86
乳清蛋白组	0.150	39.91±3.99
人参肽1组	0.075	45.66±3.49*a
人参肽2组	0.150	51.55±3.06*a
人参肽3组	0.300	54.03±4.05*a
人参肽4组	0.600	56.42±8.23*a

组别	剂量	存活时间 (min)
空白对照组	0.000	18.56±1.37
乳清蛋白组	0.150	21.44±2.32
人参肽1组	0.075	21.46±1.29
人参肽2组	0.150	22.94±5.19
人参肽3组	0.300	26.25±4.92*a
人参肽4组	0.600	27.08±5.73*a

组别	剂量	存活时间 (min)
空白对照组	0.000	20.00±0.67
乳清蛋白组	0.150	20.10±0.88
人参肽1组	0.075	20.90±10.88
人参肽2组	0.150	22.20 ±0.92*a
人参肽3组	0.300	22.20 ±1.48*a
人参肽4组	0.600	21.80 ±0.92* a

常压耐缺氧存活时间 显著延长

Survival time under normobaric hypoxia is significantly prolonged.

亚硝酸钠中毒存活时间 显著延长

Survival time under sodium nitrite poisoning is significantly prolonged.

脑缺血性缺氧存活时间 显著延长

Survival time under ischemic hypoxia is significantly prolonged.

人参肽降血糖实验 Ginseng peptide blood glucose-lowering experiment

组别	均值	标准差
空白组模型对照组	6.95	0.21381
人参肽0.0625	9.8875	0.69783
人参肽0.125	8.7625	0.35026
人参肽0.25	8.0375	0.87495
人参肽0.5	7.8875	0.53569
人参肽1.0	8.4625	0.74821
人参肽2.0	8.075	0.50071
乳清蛋白	8.375	1.29256
	7.575	0.61818

正常动物组空腹血糖均值 Mean fasting blood glucose level in the normal animal group

分组	N	均值	标准差	均值的标准误差
空白组	14	6.6007	0.78056	0.20861
干预组	14	6.4564	0.59465	0.15893

T检验结果, 两组动物空腹血糖 $P > 0.05$, 说明经过水喝高浓度人参肽溶液干预后, 两组动物相互之间空腹血糖未产生明显差异。推论人参肽溶液不会影响正常人体的血糖。T-test results show that the fasting blood glucose between the two groups of animals has $P > 0.05$, indicating that after intervention with high-concentration ginseng peptide solution, there is no significant difference in fasting blood glucose between the two groups. It can be inferred that ginseng peptide solution does not affect normal blood glucose levels in healthy individuals.

对糖尿病具有改善作用, 主要表现为抑制餐后血糖增高。

Has an improving effect on diabetes, mainly by inhibiting the rise in postprandial blood glucose.

营养价值

Nutritional value

组别	剂量/ (g/kg m ₀)	血清		肝脏
		8-表氢氧异前列腺素 质量浓度/ (pg/mL)	MDA浓度/ (nmol/L)	MDA浓度/ (nmol/L)
空白对照组	0.000 0	70.1 ± 7.7	2.67 ± 0.30	3.22 ± 0.37
模型对照组	0.000 0	73.7 ± 7.4	3.19 ± 0.36 ^{a*}	3.49 ± 0.14
乳清蛋白组	0.250 0	67.1 ± 5.1	3.23 ± 0.22	3.21 ± 0.27
GOP A组	0.062 5	66.5 ± 1.1	2.84 ± 0.27	3.06 ± 0.27 ^{b*}
GOP B组	0.125 0	67.5 ± 9.1	3.11 ± 0.35	2.94 ± 0.43 ^{b*}
GOP C组	0.250 0	62.5 ± 9.1	3.21 ± 0.22	3.30 ± 0.25
GOP D组	0.500 0	65.2 ± 11.6 ^b	2.82 ± 0.40 ^{bc}	3.15 ± 0.18 ^b
GOP E组	1.000 0	68.3 ± 12.2	2.95 ± 0.49	3.23 ± 0.38
GOP F组	2.000 0	72.9 ± 6.4	2.84 ± 0.27 ^{bc}	2.48 ± 0.25 ^{ab^{bc}}

下降
12.69%

组别	剂量/ (g/kg m ₀)	血清GSH质量 浓度/ (ng/L)	肝脏GSH质量 浓度/ (ng/L)
		空白对照组	0.000 0
模型对照组	0.000 0	424.5 ± 79.2	416.8 ± 109.5
乳清蛋白组	0.250 0	413.3 ± 28.0	423.5 ± 28.5
GOP A组	0.062 5	367.7 ± 80.9	436.4 ± 93.2
GOP B组	0.125 0	429.1 ± 60.4	416.9 ± 61.7
GOP C组	0.250 0	502.9 ± 55.2 ^{abc}	434.0 ± 105.8
GOP D组	0.500 0	423.6 ± 94.6	458.7 ± 67.1
GOP E组	1.000 0	429.9 ± 92.4	372.5 ± 102.0
GOP F组	2.000 0	399.1 ± 58.3	443.0 ± 75.0

提高
21.67%

结论1: 人参肽添加组与对照组相比, 小鼠血清中氧化产物 MDA 浓度下降12.69%, 说明人参肽可抗氧化, 具有抑制MDA生成、减少细胞损伤的作用。

Conclusion 1: Compared with the control group, the ginseng peptide-supplemented group showed a 12.69% decrease in serum malondialdehyde (MDA) levels in mice. This indicates that ginseng peptides have antioxidant effects, inhibiting MDA formation and reducing cellular damage.

组别	剂量/ (g/kg m ₀)	血清		肝脏	
		SOD活力/ (U/L)	GSH-Px浓度/ (pmol/mL)	SOD活力/ (U/L)	GSH-Px浓度/ (pmol/mL)
空白对照组	0.000 0	141.8 ± 18.4	22.3 ± 2.90	142.4 ± 19.4	23.8 ± 1.77
模型对照组	0.000 0	127.5 ± 14.5	24.7 ± 2.51	132.9 ± 15.0	24.8 ± 2.05
乳清蛋白组	0.250 0	136.3 ± 19.6	23.1 ± 2.13	137.0 ± 10.2	25.8 ± 3.81
GOP A组	0.062 5	123.0 ± 11.6	26.2 ± 1.87	134.7 ± 14.7	25.5 ± 2.40
GOP B组	0.125 0	132.4 ± 17.7	23.2 ± 2.70	134.4 ± 6.5	26.2 ± 2.51
GOP C组	0.250 0	141.7 ± 19.5	25.2 ± 2.58 ^a	148.7 ± 7.7 ^b	22.9 ± 2.11 ^c
GOP D组	0.500 0	133.1 ± 18.4	25.3 ± 2.93 ^a	150.3 ± 9.7 ^{bc}	28.1 ± 3.15 ^{ab}
GOP E组	1.000 0	162.3 ± 15.1 ^{abc}	25.4 ± 3.49 ^a	139.9 ± 14.8	26.6 ± 3.95 ^a
GOP F组	2.000 0	129.8 ± 17.7	26.3 ± 3.23 ^{ac}	150.8 ± 10.4 ^{bc}	28.2 ± 1.46 ^{ab}

提高
27.29%

结论2: 人参肽能够通过提高SOD和GSH-Px的活性来减少自由基的氧化, 并起到保护细胞膜的作用。

Conclusion 2: Ginseng peptides can reduce free radical oxidation by increasing the activity of SOD and GSH-Px, thereby helping to protect cell membranes.

结论3: 人参肽可以保护蛋白质免受氧化损伤。

Conclusion 3: Ginseng peptides can protect proteins from oxidative damage.

注: 数据来自于《吉林人参低聚肽的抗氧化作用》营养卫生 2017, VOI.38, No.21

Note: Data sourced from "Antioxidant Effects of Jilin Ginseng Oligopeptides", Nutrition and Hygiene, 2017, Vol. 38, No. 21.

营养价值

Nutritional value

组别	剂量 (g/kg bw)	NO ($\mu\text{mol/L}$)	NOS ($\mu\text{mol/L}$)
空白对照组	0	46.1 \pm 2.39	43.7 \pm 2.65
模型对照组	0	20.4 \pm 2.56a*	15.0 \pm 2.95a*
乳清蛋白组	0.25	44.1 \pm 1.68ab*	40.8 \pm 2.96a*b*
人参肽A组	0.0625	34.2 \pm 2.38a*b*c*	36.9 \pm 2.55 a*b*c
人参肽B组	0.125	46.2 \pm 2.29b*c	32.3 \pm 2.14 a*b*c
人参肽C组	0.25	35.7 \pm 2.43a*b*c	43.6 \pm 2.51b*c*
人参肽D组	0.5	44.4 \pm 2.27b*	29.5 \pm 2.46 a*b*c
人参肽E组	1	38.9 \pm 2.47 a*b*c	37.4 \pm 2.13 a*b*c
人参肽F组	2	42.0 \pm 1.91 a*b*c	33.6 \pm 2.32 a*b*c

提高 1.18倍

提高 1.91倍

结论：与模型对照组相比，人参肽各组大鼠血清NO和NOS水平分别提高1.18倍和1.91倍，说明人参肽可以提高高脂模型大鼠血清NO和NOS水平，具有保护血管内皮细胞的作用。

Conclusion: Compared with the model control group, serum NO and NOS levels in rats in the ginseng peptide groups increased by 1.18-fold and 1.91-fold, respectively. This indicates that ginseng peptides can elevate serum NO and NOS levels in high-fat model rats and have a protective effect on vascular endothelial cells.

牡蛎低聚肽粉

Oyster oligopeptide powder

海底中的牛奶

牡蛎，俗称蚝，别名海蛎子，牡蛎肉肥爽滑、味道鲜美、营养丰富，含丰富的蛋白质、脂肪、钙、铁、锌、硒等营养成分，在西方，牡蛎被誉为“神赐魔食”，在我国有“南方之牡蛎，北方之熊掌”之说，牡蛎中还含有海洋生物特有的多种活性物质及多种氨基酸，被称为“海底牛奶”之美称。

Milk of the sea

Oysters, commonly known as “oyster” or “sea oyster,” are rich in nutrients. The flesh is plump, smooth, and delicious, with a high nutritional value. They contain abundant protein, fats, calcium, iron, zinc, selenium, and other nutrients. In the West, oysters are regarded as a “divine food bestowed by the gods.” In China, there is a saying: “Southern oysters, northern bear paws,” highlighting their delicacy.

Oysters also contain various marine bioactive substances and multiple amino acids unique to the ocean, earning them the reputation of the “milk of the sea.”



牡蛎低聚肽 Oyster oligopeptides

新鲜牡蛎高科技提取 High-tech extraction from fresh oysters

《本草纲目》记载，牡蛎多食之，能细活皮肤，补肾壮阳，并能治虚、解丹毒。

According to Compendium of Materia Medica (Ben Cao Gang Mu), excessive consumption of oysters can help refine and nourish the skin, tonify the kidneys and enhance vitality, and also help treat deficiency conditions and relieve toxin-related skin disorders.

牡蛎有效改善人体生殖功能及精子质量,提高男性抗疲劳能力,特别适用于虚劳、虚损的病患和阴虚、血亏、气血不足的人。

Oysters can effectively improve human reproductive function and sperm quality, and enhance male anti-fatigue ability. They are especially suitable for patients with general weakness and deficiency conditions, as well as those with yin deficiency, blood deficiency, and insufficient qi and blood.

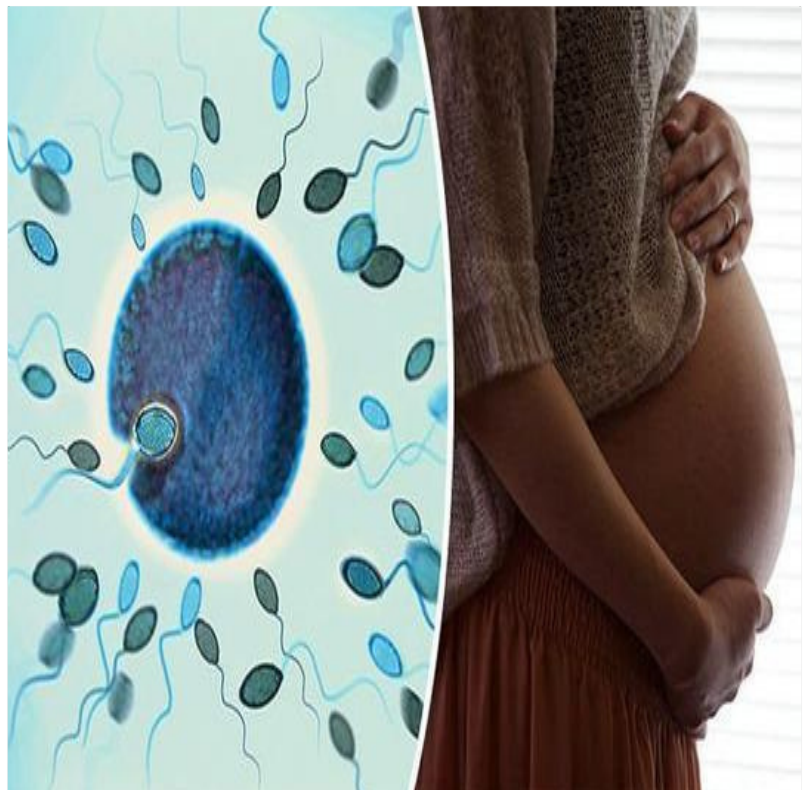
牡蛎低聚肽优选新鲜牡蛎精制而成,富含18种以上氨基酸、维生素B族,经现代专利低温酶解技术萃取,可被人体直接吸收利用,完整保留新鲜牡蛎的营养成分及活性物质。

Oyster oligopeptides are refined from carefully selected fresh oysters and are rich in more than 18 types of amino acids and B vitamins. They are extracted using modern patented low-temperature enzymatic hydrolysis technology, allowing direct absorption and utilization by the human body, while fully preserving the nutritional components and bioactive substances of fresh oysters.



营养价值

Nutritional value



牡蛎肽对D-半乳糖致衰老大鼠精子质量的影响 由于对实验过程预计不足以及操作顺序设计不够理想，导致该部分实验的个别数据脱靶。模型对照组与正常组相比，在精子数量、精子存活率、每日精子生成量和精子畸形率方面差异均有统计学意义 ($P < 0.05$)，提示建模成功。与模型对照组的精子质量相比，**牡蛎肽高剂量组能显著提升精子数量、精子存活率和每日精子生成量，降低精子畸形率**，差异均有统计学意义 ($P < 0.05$)。提示在高治疗剂量下，牡蛎肽能显著提升D-半乳糖致衰老大鼠的精子质量。

Effects of oyster peptides on sperm quality in D-galactose-induced aging rats Due to insufficient estimation of the experimental process and suboptimal design of the operational sequence, some data in this section deviated from expected results. Compared with the normal group, the model control group showed statistically significant differences ($P < 0.05$) in sperm count, sperm viability, daily sperm production, and sperm deformity rate, indicating successful model establishment. Compared with the model control group, the high-dose oyster peptide group significantly increased sperm count, sperm viability, and daily sperm production, while significantly reducing sperm deformity rate ($P < 0.05$). These results suggest that at a high therapeutic dose, oyster peptides can significantly improve sperm quality in D-galactose-induced aging rats.

摘自：牡蛎肽对D-半乳糖致衰老大鼠睾丸组织及精子质量的影响——李大炜

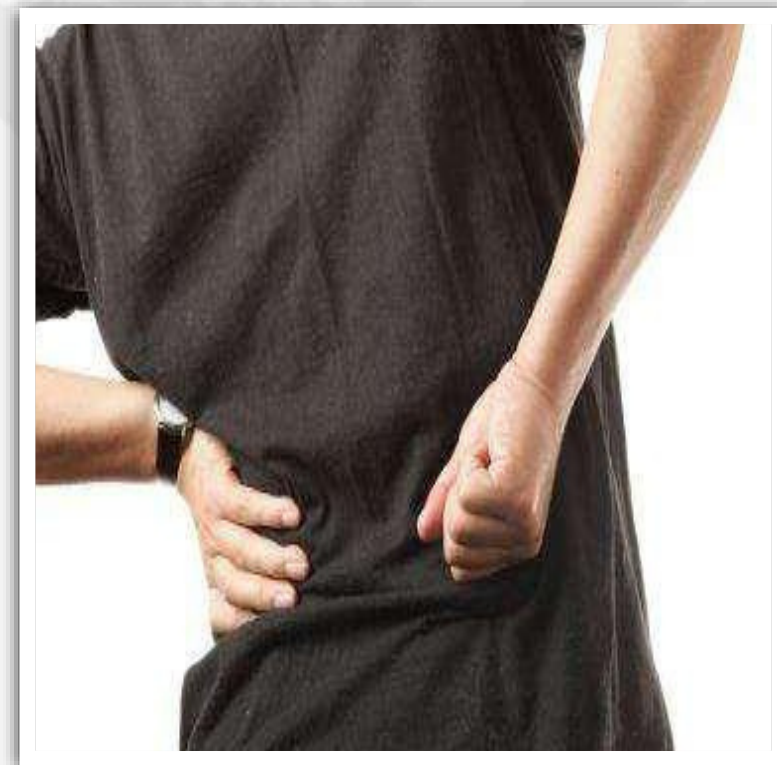
Excerpt from: Effects of Oyster Peptides on Testicular Tissue and Sperm Quality in D-Galactose-Induced Aging Rats — Li Dawei

营养价值

Nutritional value

通过肌肉注射氢化可的松建立肾阳虚模型，并观察牡蛎肽的干预作用。由牡蛎肽各组的激素水平变化和可以看出，牡蛎肽可显著改善肾阳虚大鼠异常的 T3、T4 及 TSH 含量，并促进下丘脑 TRH mRNA 的表达，对甲状腺组织也有较好的保护作用，且本次实验中以 300 mg/kg 的剂量效果最好。本次实验说明**牡蛎肽可改善肾阳虚模型大鼠的血清激素水平及下丘脑 TRH mRNA 表达**，可预防甲状腺病理变化，对改善肾阳虚证有明显的效果；其效果与调节下丘脑 - 垂体 - 甲状腺轴的内分泌功能有关，且在基因表达的水平上参与了调节。

A kidney-yang deficiency model was established by intramuscular injection of hydrocortisone, and the intervention effects of oyster peptides were observed. Based on the changes in hormone levels across the oyster peptide groups, it was found that oyster peptides significantly improved abnormal levels of T3, T4, and TSH in kidney-yang deficiency rats, and promoted the expression of hypothalamic TRH mRNA. They also provided protective effects on thyroid tissue, with the best results observed at a dosage of 300 mg/kg. This experiment indicates that oyster peptides can improve serum hormone levels and hypothalamic TRH mRNA expression in kidney-yang deficiency model rats, help prevent pathological changes in the thyroid, and have a significant effect in improving kidney-yang deficiency syndrome. Their mechanism may be related to the regulation of the hypothalamic-pituitary-thyroid (HPT) axis endocrine function, and they may also participate in regulation at the level of gene expression.



摘自：牡蛎肽对肾阳虚大鼠下丘脑垂体甲状腺轴调节作用的研究——李亚

Excerpt from: Study on the Regulatory Effect of Oyster Peptides on the Hypothalamic-Pituitary-Thyroid Axis in Kidney-Yang Deficiency Rats — Li Ya

肉苁蓉

Cistanche

“沙漠人参” 肉苁蓉

肉苁蓉主要产于内蒙古、新疆、宁夏、甘肃等地的沙漠地区，素有“沙漠人参”之美誉，具有极高的药用价值，是中国传统名贵中草药，也是历史上被西域各国上贡朝廷的珍品，也是历代补肾壮阳类处方中使用频度最高补益药物之一。

“Desert Ginseng” – Cistanche

Cistanche mainly grows in desert regions of Inner Mongolia, Xinjiang, Ningxia, and Gansu. It is known as the “Desert Ginseng” due to its highly valued medicinal properties. It is a precious traditional Chinese herb with a long history and was once offered as a tribute to imperial courts by countries in the Western Regions. It is also one of the most frequently used tonic herbs in traditional formulas for supporting kidney function and enhancing vitality.





肉苁蓉 Cistanche

《中华人民共和国药典》记载：“肉苁蓉补肾阳、益精血、润肠通便。用于肾阳不足、精血亏虚、阳痿不孕、筋骨无力、肠燥便秘”肉苁蓉，被《神农本草经》列为滋补上品现代药理学研究表明，肉苁蓉具有抗衰老、抗痴呆、抗疲劳、缺血保护、抗骨质疏松、润肠通便、免疫调节、保护肝脏，改善生殖作用的功效。

According to the Pharmacopoeia of the People's Republic of China, Cistanche is used to tonify kidney yang, nourish essence and blood, and moisten the intestines to relieve constipation. It is indicated for conditions such as kidney yang deficiency, deficiency of essence and blood, impotence and infertility, weakness of tendons and bones, and dry intestines with constipation.

Cistanche is also classified as a superior tonic herb in the Shennong Bencao Jing (Classic of Materia Medica). Modern pharmacological studies have shown that Cistanche possesses effects such as anti-aging, anti-dementia, anti-fatigue, ischemic protection, anti-osteoporosis, laxative effects, immune regulation, liver protection, and improvement of reproductive function.

关于肉苁蓉的传说

Legends about *Cistanche deserticola*

传说成吉思汗在著名的“十三翼之战”中，与对手札木合集结的重兵大战，暂时失利，被围困于长满梭梭的沙漠中，饥渴难耐，筋疲力尽，此时正值农历三九的第三天，天寒地冻，示威的札木合当众残忍地将俘虏分七十大锅煮杀，激怒了天神。天神派出神马，神马一跃，来到成吉思汗的面前，仰天长啸，将精血射向梭梭树根，然后用蹄子刨出了像神马生殖器一样的植物根块，这块根即肉苁蓉，成吉思汗与部将们吃了肉苁蓉，神力涌现，冲下沙山，一举击溃了札木合部落，抢了财物和女人，为统一蒙古奠定了基础。从此，成吉思汗开创了征服欧亚大陆的新时代。

It is said that during the famous Battle of the Thirteen Wings, Genghis Khan fought a major battle against the heavily armed forces assembled by his rival Jamukha. After a temporary defeat, Genghis Khan was surrounded and trapped in a desert covered with saxaul trees, suffering from hunger and thirst, completely exhausted. At that time, it was the third day of the coldest period of winter (the “Sanjiu” days in the lunar calendar), with freezing weather.

To demonstrate his power, Jamukha cruelly boiled the captives alive in seventy large cauldrons in public, which enraged the heavens. The gods then sent a divine horse. The horse leapt forward, appeared before Genghis Khan, raised its head and neighed loudly toward the sky, spraying its essence and blood onto the roots of the saxaul trees. It then used its hooves to dig out a plant root that resembled the reproductive organ of the divine horse—this root was *Cistanche*.

After Genghis Khan and his generals consumed the *Cistanche*, their strength surged and divine power filled them. They charged down the sand dunes and defeated Jamukha's tribe in one decisive battle, seizing wealth and women, thus laying the foundation for the unification of Mongolia. From then on, Genghis Khan began a new era of conquering the Eurasian continent.

内蒙古阿拉善地区冬季高寒、夏季酷热，春秋两季风沙较大，阿拉善的牧区居民，居住分散且交通不发达，常年以肉、奶类食品为主，蔬菜食用量极少。为了应对严酷的生存环境，人们常年用鲜肉苁蓉替代蔬菜，以干肉苁蓉炖肉、泡酒，不仅补充了微量元素，还使其身体阴阳得到平衡，极少出现高血压、高血糖、高血脂等疾病。

The Alxa region of Inner Mongolia experiences extremely cold winters, intensely hot summers, and frequent sandstorms during spring and autumn. The pastoral residents in Alxa live in scattered communities with underdeveloped transportation, and their diet mainly consists of meat and dairy products, with very little vegetable intake.

To cope with the harsh living environment, people often use fresh *Cistanche* as a substitute for vegetables. Dried *Cistanche* is commonly stewed with meat or used to infuse liquor. This not only helps supplement essential micronutrients but also promotes a balance of yin and yang in the body, resulting in a very low incidence of conditions such as high blood pressure, high blood sugar, and high blood lipids.

营养价值

Nutritional value

肉苁蓉的现代研究 Modern Research on Cistanche

现代药物分析指出，药物肉苁蓉，含肉苁蓉苷、洋丁香酚、海胆苷、胡萝卜苷、生物碱、15种氨基酸、糖类等。所含的苯乙醇苷类，具有壮阳、抗氧化、增强记忆力等多种功能；其他还有甾醇类、环烯醚萜类、木质素类、多糖、生物碱等多种抗衰老成分。矿物质的含量比一般中药更高，如铁、钙、镁、磷、铜、锰、锌等，尤其是铁的含量达到了63.1毫克/100克。肉苁蓉能够增强机体的免疫功能。动物实验证实，肉苁蓉多糖能促进小鼠胸腺淋巴细胞增殖，增强小鼠淋巴细胞分泌免疫因子的能力，增加E-玫瑰花结形成率，促进其腹腔内吞噬细胞的吞噬能力，还能使阳虚动物体液免疫功能恢复，因此具有良好的抗炎症、抗肿瘤作用。肉苁蓉能清除自由基、抗衰老。它所含的苯乙醇苷，具有清除自由基的作用，可明显降低血液和肝中的脂质过氧化物的含量，通过这种抗氧化而抗衰老。肉苁蓉多糖能显著提高线粒体酶的活性，这也是其抗衰老作用。它还能兴奋垂体、肾上腺等内分泌腺，促进激素的释放，有类似肾上腺皮质激素的功能，能够调节机体的免疫功能。所以，肉苁蓉抗衰老是多途径的。又有研究指出，肉苁蓉含的松果菊苷，能有效地减少肝组织自由基生成，防止肝细胞膜脂质过氧化，因此可保护肝细胞。还可防止肝组织的损伤，是治疗肝炎、肝硬化的常用药物。肉苁蓉还有降低血压、促进唾液分泌、抗动脉粥样硬化等作用，还有调节内分泌、提高性功能、促进代谢、增强记忆以及通便等作用，在临床上应用甚广。

Modern pharmacological analysis indicates that the medicinal herb Cistanche contains cistanosides, eugenol, echinacoside, carotene glycosides, alkaloids, 15 kinds of amino acids, and sugars. The phenylethanoid glycosides it contains have various functions such as enhancing yang, antioxidation, and improving memory; additionally, it contains sterols, iridoids, lignans, polysaccharides, alkaloids, and other anti-aging components. The mineral content is higher than that of general traditional Chinese medicines, including iron, calcium, magnesium, phosphorus, copper, manganese, zinc, etc., especially iron, which reaches 63.1 mg per 100 grams. Cistanche can enhance the body's immune function. Animal experiments have confirmed that Cistanche polysaccharides can promote the proliferation of thymic lymphocytes in mice, enhance the ability of mouse lymphocytes to secrete immune factors, increase the formation rate of E-rosettes, promote the phagocytic ability of peritoneal phagocytes, and restore the humoral immune function of yang-deficient animals. Therefore, it has good anti-inflammatory and anti-tumor effects. Cistanche can eliminate free radicals and resist aging. The phenylethanoid glycosides it contains can remove free radicals and significantly reduce the content of lipid peroxides in blood and liver, thereby exerting antioxidant and anti-aging effects. Cistanche polysaccharides can significantly improve mitochondrial enzyme activity, which is also part of its anti-aging effect. It can also stimulate endocrine glands such as the pituitary and adrenal glands, promote hormone release, and has functions similar to adrenocortical hormones, enabling regulation of the body's immune function. Therefore, the anti-aging effects of Cistanche occur through multiple pathways. Studies have also shown that echinacoside contained in Cistanche can effectively reduce the generation of free radicals in liver tissue, prevent lipid peroxidation of liver cell membranes, thereby protecting liver cells. It can also prevent liver tissue damage and is a commonly used medicine for treating hepatitis and liver cirrhosis. Cistanche also has effects such as lowering blood pressure, promoting saliva secretion, and resisting atherosclerosis. It can also regulate endocrine function, improve sexual function, promote metabolism, enhance memory, and relieve constipation, and is widely used in clinical practice.

摘自《沙漠人参肉苁蓉》段振离

“Excerpt from Desert Ginseng: Cistanche by Duan Zhenli”

营养价值

Nutritional value

肉苁蓉醇提取物对小鼠肾虚及糖代谢的影响

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摘要：现代药理研究表明，肉苁蓉具有抗疲劳、抗衰老、调节分泌代谢等作用。肉苁蓉醇提取物对肾虚小鼠的作用研究多集中表现在激素水平，但未见对小鼠糖代谢的研究报道。为探究肉苁蓉醇提取物对小鼠肾虚和糖代谢水平的影响，建立肾虚小鼠和糖尿病小鼠模型，连续灌胃21d后，检测肾虚小鼠血清激素水平，测定酶活力，取睾丸组织进行石蜡包埋切片和HE染色，观察其病理学状态。检测糖尿病小鼠体重、空腹血糖和总蛋白变化情况。结果表明：醇提取物可使肾虚小鼠的体重增加，灌胃给药组超氧化物歧化酶（SOD）活力降低，显示醇提取物有调节清除自由基的作用（ $p < 0.001$ ）；组织切片显示，肉苁蓉灌胃给药组的生精小管内精子数增多，表明醇提取物使肾虚小鼠的生精能力提高。低剂量醇提取物可显著降低雄性糖尿病小鼠的血糖水平（ $p < 0.05$ ），醇提取物可调节糖尿病造成的总蛋白水平异常（ $p < 0.05$ ）。因此，肉苁蓉醇提取物对雄性肾虚小鼠模型具有生殖改善作用，同时对糖尿病小鼠模型的血糖水平有一定的影响。

关键词：荒漠肉苁蓉；氧化应激；肾虚；降血糖；

Effects of Ethanol Extract of Cistanche on Kidney Deficiency and Glucose Metabolism in Mice

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Abstract: Modern pharmacological studies have shown that Cistanche has effects such as anti-fatigue, anti-aging, and regulation of secretion and metabolism. Studies on the effects of ethanol extracts of Cistanche on kidney-deficient mice have mostly focused on hormone levels, but there are no reports on glucose metabolism in mice. To investigate the effects of ethanol extracts of Cistanche on kidney deficiency and glucose metabolism in mice, kidney-deficient mouse and diabetic mouse models were established. After continuous intragastric administration for 21 days, serum hormone levels in kidney-deficient mice were measured, enzyme activity was determined, and testicular tissues were collected for paraffin embedding, sectioning, and HE staining to observe pathological status. Body weight, fasting blood glucose, and total protein changes in diabetic mice were also measured. The results showed that the ethanol extract increased the body weight of kidney-deficient mice, and the activity of superoxide dismutase (SOD) in the intragastric administration group decreased, indicating that the extract has a regulatory effect on free radical scavenging ($p < 0.001$). Tissue sections showed that the number of sperm in seminiferous tubules increased in the Cistanche-treated group, indicating improved spermatogenic ability in kidney-deficient mice. Low-dose ethanol extract significantly reduced blood glucose levels in male diabetic mice ($p < 0.05$), and also regulated abnormalities in total protein levels caused by diabetes ($p < 0.05$). Therefore, ethanol extracts of Cistanche have reproductive improvement effects in male kidney-deficient mouse models and also have certain effects on blood glucose levels in diabetic mouse models.

Keywords: Desert Cistanche; Oxidative stress; Kidney deficiency; Hypoglycemic effect;

营养价值

Nutritional value

肉苁蓉苯乙醇苷类成分抗骨质疏松作用机制研究进展

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摘要: 肉苁蓉是一种珍贵的滋补类药材, 素有“沙漠人参”的美誉, 具有极高的药用价值和食用价值。药理学研究已确认肉苁蓉具有抗氧化、抗炎、抗疲劳、抗衰老、抗骨质疏松、润肠通便、保肝、免疫调节等药理作用, 其中苯乙醇苷类是其主要活性成分之一。近年来, 肉苁蓉苯乙醇苷类成分抗骨质疏松的作用得到广泛关注, 松果菊苷和毛蕊花糖苷是其代表性成分, 笔者总结了国内外肉苁蓉苯乙醇苷类成分的文献资料, 对其体内代谢转化过程和产物以及抗骨质疏松的药效学与作用机制的研究进展进行综述, 以期为肉苁蓉的实验研究、药物和保健食品开发及临床应用提供参考。

关键词: 肉苁蓉; 苯乙醇苷类; 体内代谢; 抗骨质疏松; 药效学; 作用机制

正文: 骨质疏松症 (OP) 是一种以骨密度降低、骨强度下降、骨组织损伤、骨量和骨中矿物质流失进而骨脆性增加及易发生骨折为特点的全身性骨代谢性疾病[1], 多见于老年人, 已成为全世界面临的健康问题, 引起世界人民的广泛关注[2]。临床主要使用具有促进骨形成、抑制骨吸收以及雌激素双重作用的药物来防治骨质疏松症。西医上主要通过降钙素类[3]、双膦酸盐类[4]、雌激素替代疗法[5]、选择性雌激素受体调节剂[6]、狄诺塞麦[7]、雷膦酸盐等来治疗骨质疏松症, 这些药物存在安全性问题, 长期使用这些药物会引起不同程度的心脑血管疾病、静脉血栓栓塞、乳腺癌等不良反应[9]。肉苁蓉

(*Cistanche deserticola* Y.C.Ma) 是中国传统补益类中药材之一, 又称大芸、苁蓉, 为列当科植物肉苁蓉或管花肉苁蓉 (*Cistanche tubulosa* (Schenk) Wight) 的干燥带鳞叶的肉质茎[10]。始载于《神农本草经》, 列为上品[11], 性甘、咸、温, 归肾经、大肠经, 素有“沙漠人参”的美誉。肉苁蓉为多年生寄生性植物, 其主要生长在极端干旱、荒漠、盐碱类沙漠植物的根部。目前全世界约有22个品种, 主要分布在欧洲的温暖干燥地区, 中国有5种肉苁蓉主要分布在内蒙古、新疆、青海、宁夏等西北荒漠地区[12]。自古以来肉苁蓉便是药食两用的植物, 大量文献资料表明肉苁蓉具有抗衰老[13]、抗疲劳[14]、抗氧化[15]、抗肿瘤[16]、抗抑郁[17]、润肠通便[18]等生物学效应, 因而具有极高的经济价值[19]。中国理论认为, 发生骨质疏松的主要原因是肾、脾、肝三脏虚损[20]。肉苁蓉具有补肾阳、益精血之功效, 现代研究表明肉苁蓉具有抗骨质疏松作用[16,21,22], 可用于骨质疏松症的治疗, 其苯乙醇苷类成分是肉苁蓉的主要活性成分之一。《中华人民共和国药典》明确规定苯乙醇苷类代表成分松果菊苷和毛蕊花糖苷为肉苁蓉的质量控制成分[10]。松果菊苷的绝对生物利用度 (F,%) 为0.83%[23], 毛蕊花糖苷的口服生物利用度 (F,%) 为0.12%[24], 这与肉苁蓉苯乙醇苷类成分的药物特性相符合。天然药物通常具有系统而广泛试验的特点, 发挥整体药效作用可能是其活性代谢产物[25]。因此本文对肉苁蓉苯乙醇苷类成分体内代谢转化过程及代谢产物进行分析, 进而确定其治疗骨质疏松症的活性成分、药效学及作用机制。

Research Progress on the Mechanism of Anti-Osteoporosis Action of Phenylethanoid Glycosides in *Cistanche deserticola*

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Abstract (Shortened)

Cistanche deserticola, known as “desert ginseng,” is a traditional medicinal herb with multiple pharmacological activities, including antioxidant, anti-inflammatory, anti-aging, and anti-osteoporosis effects. Its main active constituents are phenylethanoid glycosides, particularly echinacoside and acteoside.

In recent years, increasing attention has been given to their anti-osteoporosis potential. This paper reviews current research on the in vivo and in vitro metabolism of phenylethanoid glycosides, their bioactive metabolites, pharmacological effects, and mechanisms in osteoporosis. It aims to provide a reference for experimental studies, drug development, functional foods, and clinical applications of *Cistanche deserticola*.

Keywords: *Cistanche deserticola*; phenylethanoid glycosides; metabolism; osteoporosis; mechanism of action

营养价值

Nutritional value

肉苁蓉生物活性成分及其免疫功效研究进展

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摘要: 肉苁蓉是我国传统的名贵中药材之一, 2020年被列为药食同源试点物质, 具有极高的保健和药用价值。肉苁蓉含有丰富的营养成分和生物活性成分, 具有调节免疫力、抗氧化、抗衰老等多种功效。文章系统归纳了肉苁蓉中苯乙醇苷类、木脂素类、环烯醚萜类、糖类及其衍生物等生物活性成分的具体化合物, 并结合免疫系统, 对不同种类生物活性成分的免疫功效进行了系统总结, 期望为深入研究肉苁蓉的免疫功效提供参考。

关键词: 肉苁蓉; 生物活性成分; 免疫系统; 功效; 研究进展;

1 肉苁蓉化学成分

目前, 已经从中国的4种肉苁蓉属植物中分别分离得到了120、75、31、20个化合物[5]。众多化合物中, 主要含有苯乙醇苷类、木脂素类、环烯醚萜类、糖类及其衍生物、挥发性物质以及多种氨基酸和微量元素等。其中, 能发挥其免疫功效的成分主要有肉苁蓉苷类、糖类以及黄酮类化合物。

Research Progress on Bioactive Components of Cistanche and Their Immunological Effects

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Abstract: Cistanche is one of the traditional and valuable Chinese medicinal materials in China. In 2020, it was listed as a pilot substance for medicine-food homology and has extremely high health care and medicinal value. Cistanche contains abundant nutritional components and bioactive substances, with multiple effects such as regulating immunity, antioxidation, and anti-aging. This article systematically summarizes the specific compounds of bioactive components in Cistanche, including phenylethanoid glycosides, lignans, iridoids, carbohydrates and their derivatives, and combines them with the immune system to systematically summarize the immunological effects of different types of bioactive components, aiming to provide references for further in-depth research on the immunological effects of Cistanche.

Keywords: Cistanche; Bioactive components; Immune system; Effects; Research progress;

1 Chemicals Components of Cistanche

At present, 120, 75, 31, and 20 compounds have been isolated from four species of the genus Cistanche in China, respectively [5]. Among these compounds, the main categories include phenylethanoid glycosides, lignans, iridoids, carbohydrates and their derivatives, volatile substances, as well as various amino acids and trace elements. Among them, the components responsible for immunological effects mainly include cistanosides, carbohydrates, and flavonoid compounds.

肉苁蓉含丰富营养成分和生物活性成分, 具有调节免疫力、抗氧化、抗衰老等多种功效

Cistanche is rich in nutrients and bioactive compounds, and has multiple effects such as regulating the immune system, antioxidant activity, and anti-aging properties.

黄精肽粉 Polygonatum Peptide Powder



黄精，俗称老虎姜，在《博物志》中被誉为“**太阳之草**”。中医认为，黄精味甘平，归脾、肺、肾经，具有补气养阴、健脾、润肺、益肾的功效。临床常用于治疗肾精亏虚、腰膝酸软等证，具有“**滋阴补益**”的作用。

Huangjing (Polygonatum), commonly known as “Tiger Ginger,” is referred to in the Bo Wu Zhi as the “Herb of the Sun.”

In Traditional Chinese Medicine (TCM), Huangjing is considered sweet and neutral in nature and is associated with the spleen, lung, and kidney meridians. It is believed to have the functions of tonifying qi and nourishing yin, strengthening the spleen, moistening the lungs, and benefiting the kidneys.

Clinically, it is often used in cases such as kidney essence deficiency and soreness or weakness of the lower back and knees. It is regarded as having the effect of nourishing yin and providing overall tonic support.

摘自：《黄精生品及不同炮制品对糖皮质激素致肾阴虚模型大鼠的作用比较》余欢迎

Source: “Comparison of the Effects of Raw Polygonatum and Its Different Processed Products on Glucocorticoid-Induced Kidney Yin Deficiency Model Rats” by Yu Huanying.

黄精肽粉 Polygonatum Peptide Powder

改善肾阴虚： cAMP和cGMP是细胞内参与调节物质代谢和生物学功能的重要物质。有研究发现，肾阴虚患者常表现为血浆cAMP水平升高。而实验证明，经黄精干预过的小鼠，其血浆中cAMP的水平均显著降低。此外，黄精的不同炮制品均能一定程度**改善肾阴虚**大鼠症状，其作用机制可能与其改善环核苷酸系统、下丘脑-垂体-肾上腺轴激素水平及肾上腺组织的保护作用有关。

Improvement of Kidney Yin Deficiency:

cAMP and cGMP are important intracellular substances involved in regulating metabolism and biological functions. Studies have found that patients with kidney yin deficiency often show elevated plasma cAMP levels. Experimental results have shown that in mice treated with Polygonatum, the plasma cAMP levels were significantly reduced.

In addition, different processed forms of Polygonatum can, to a certain extent, improve symptoms in rats with kidney yin deficiency. The underlying mechanism may be related to the regulation of the cyclic nucleotide system, modulation of hormone levels in the hypothalamic–pituitary–adrenal (HPA) axis, and protective effects on adrenal tissue.



摘自：《黄精生品及不同炮制品对糖皮质激素致肾阴虚模型大鼠的作用比较》余欢迎

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黄精生品及不同炮制品对糖皮质激素致肾阴虚模型大鼠的作用比较

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【摘要】目的 比较黄精生品及不同炮制品对糖皮质激素致肾阴虚的影响。方法 采用大量灌胃氢化可的松的方法制备肾阴虚大鼠模型。将70只SD大鼠随机分成空白组、模型组、阳性对照组(六味地黄丸组)、生品组(黄精生品组)、两蒸组(黄精两蒸组)、四蒸组(黄精四蒸组)、九蒸组(黄精九蒸组), 每组10只。各给药组大鼠按相应剂量灌胃给药, 每天给药1次, 连续11 d; 空白组和模型组灌胃等量蒸馏水。实验开始后第8~11 d, 除空白组外, 其余各组均灌胃氢化可的松(50 mg/kg)。实验期间观察大鼠体征、体质量、饮水量、排尿量。末次给药后, 经腹主动脉取血, 分离血清, 测定血清肌酐(creatinine, Cr)、皮质酮(corticosterone, CORT)以及环磷酸腺苷(cyclic adenosine monophosphate, cAMP)、环磷酸鸟苷(cyclic guanosine monophosphate, cGMP)水平; 摘取肾上腺组织, 苏木精-伊红染色法进行病理学观察。结果 与空白组比较, 模型组大鼠各指标差异均有统计学意义($P < 0.05$), 肾上腺组织病理损伤较为明显。与模型组比较, 两蒸组、四蒸组大鼠饮水量显著下降($P < 0.05$), 两蒸组大鼠尿量显著降低($P < 0.05$); 各给药组大鼠血浆cAMP水平显著降低($P < 0.05$), cGMP水平显著升高($P < 0.05$), 血浆CORT、Cr水平及cAMP/cGMP比值显著降低($P < 0.05$)。与生品组比较, 两蒸组大鼠血浆cGMP水平显著升高($P < 0.05$), 四蒸组、九蒸组大鼠血浆CORT、Cr水平显著降低($P < 0.05$)。各给药组均能在一定程度上改善受损的肾上腺组织。结论 黄精生品及不同炮制品对肾阴虚大鼠均有一定程度的改善作用, 蒸制后黄精的滋阴作用增强。其中以九蒸黄精对肾阴虚模型大鼠环核苷酸系统、下丘脑-垂体-肾上腺轴激素水平及肾上腺组织形态的改善效果最佳

Objective To compare the effects of raw and processed *Polygonatum sibiricum* on glucocorticoid-induced kidney yin deficiency.

Methods A rat model was established using hydrocortisone. Rats were divided into control, model, positive control, raw, twice-, four-, and nine-times-steamed groups. Treatments were given for 11 days. Body condition, water intake, and urine output were recorded. Serum Cr, CORT, cAMP, and cGMP levels were measured, and adrenal tissues were examined.

Results Compared with the model group, treated groups showed reduced water intake and urine output, decreased cAMP, CORT, Cr, and cAMP/cGMP ratio, and increased cGMP ($P < 0.05$). Adrenal damage was improved in all groups. The steamed products showed stronger effects, especially the nine-times-steamed group.

Conclusion Both raw and processed *Polygonatum sibiricum* improve kidney yin deficiency. Steaming enhances its efficacy, with the nine-times-steamed product showing the best overall effect.

摘自:《黄精生品及不同炮制品对糖皮质激素致肾阴虚模型大鼠的作用比较》余欢迎

Excerpted from: "Comparison of the Effects of Raw and Processed *Polygonatum sibiricum* on Glucocorticoid-Induced Kidney Yin Deficiency Model Rats" — Yu Huanying

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People with kidney deficiency



三高人群

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心脑血管人群

People with cardiovascular and cerebrovascular conditions



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免疫力低下人群

People with low immunity



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Other sub-healthy individuals

服用方法

Usage instructions



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浓浓奶香，口感浓郁

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搭配蜂蜜

甜而不腻，口感香甜

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搭配果汁

酸酸甜甜，口感更佳

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食用方法：一天1次，一次2片。建议用温开水送服。

Usage instructions: Take once daily, 2 tablets each time. It is recommended to take with warm boiled water.



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