

IDEAL PHARMA PEPTIDE

IDEAL[®]
PHARMA
PEPTIDE

PEPTIDE
WORLD
COMPANY

—
SHORT REVIEW

SHORT PEPTIDES AND PEPTIDE COMPLEXES

2018

WWW.IDEAL-PHARMA-PEPTIDE.COM



Content

Introduction	03
1. Short Peptides	07
2. Peptide Complexes	21
Conclusion	24

Ideal Pharma Peptide — innovative company

Using international experience and knowledge concerning peptides, the company has developed production technologies and methods of analysis for peptide complexes; it conducts researches on the efficacy of their use, both in pure forms and in peptide-based products.

Sophisticated, high-tech process of the peptide and peptide complex production implies presence of complex biotechnological innovations and techniques, enormous scientific and laboratory facilities, it allows the company to take a leading place in a new segment of the market of peptides and commodity systems based on them.

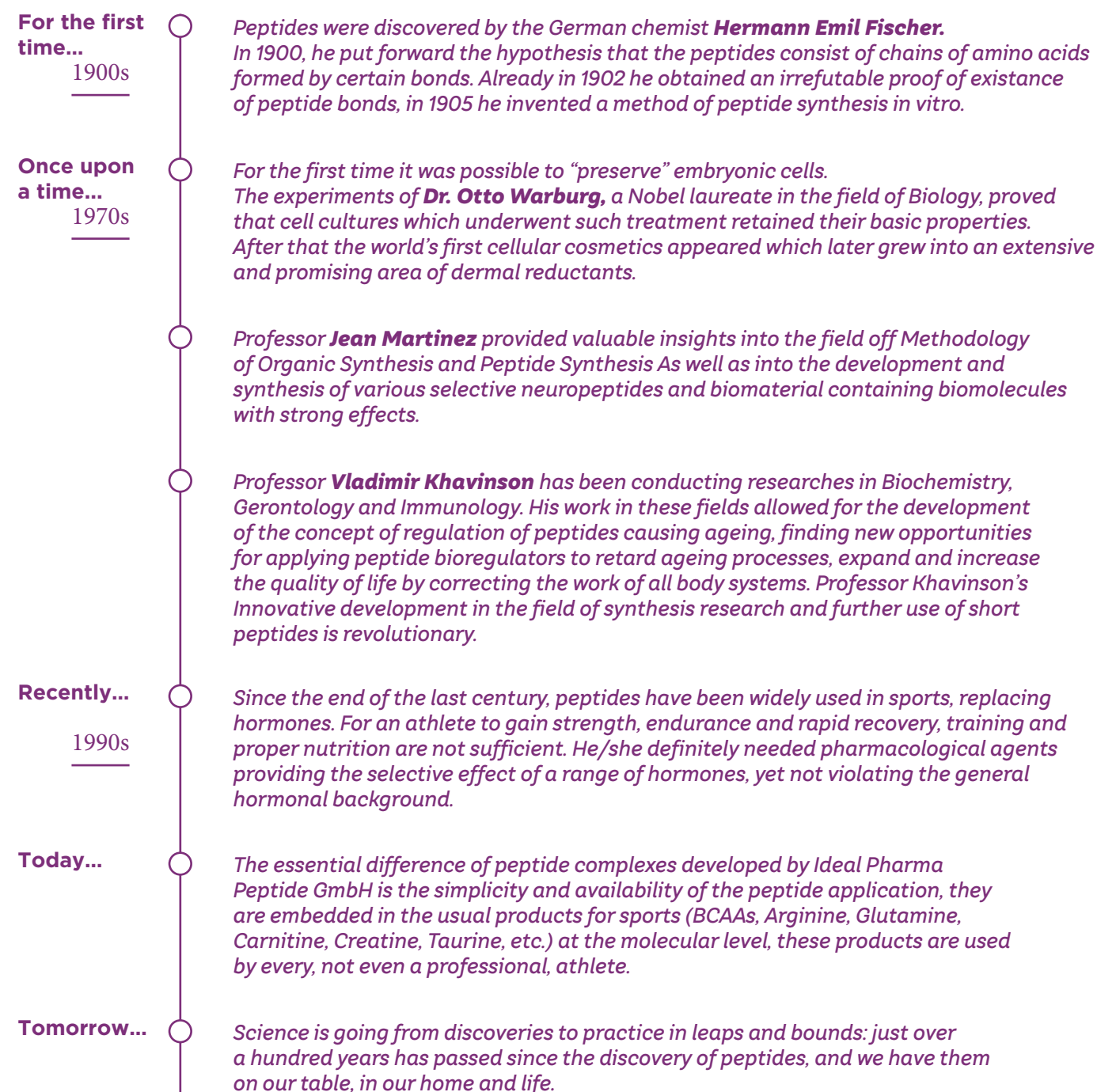
Peptide complexes for the pharmaceutical, food and cosmetic industries for the production of sports nutrition and dietary supplements designed by Ideal Pharma GmbH were the embodiment of the global research results.

Peptide complexes we offer represent high-tech raw materials ready to use in your ambitious plans.

This is an opportunity to create innovative products and bring them to the market.



History and prospects of Peptide Complexes



Investments in innovations increase your profits

Investments in innovative products eventually lead to a high added value when compared to the products available on the market and thus maximize the profit of your company. Standard products presuppose strong competition and a lower added value for the manufacturing company.

We offer our partners an opportunity to increase rentability via lower expenses, to improve technology and make the most of the production capacity. Actual production costs (staff, space, equipment and energy) are reduced, there is no residual stock at the warehouses, there is no need to purchase additional components (anti-clotting agents, moisture retainers, sliding agents and others), there is no need to address the issues of mixing and obtaining a homogeneous raw material or considering different periods of raw material shelf life and its availability at your production site.

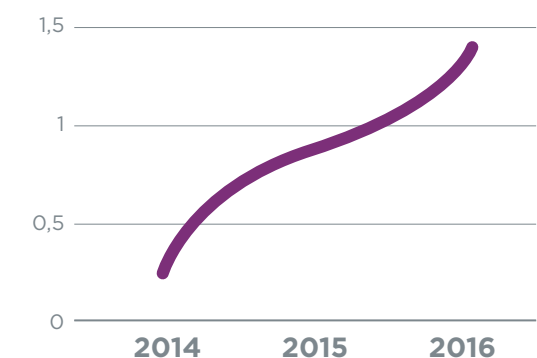
By receiving ready-made innovative complexes, our partners obtain a business solution with a high added value of the end product. Taking into account that each product brought to market has its own life cycle, we strive to be a step ahead and offer innovative complexes right from the beginning which will allow our partners to redesign the future portfolio of their product line.

In today’s fast-paced world, investments in innovation represent the company’s competitiveness.

Those who use advanced scientific solutions before their competitors do have the maximum competitive advantage and are rapidly moving ahead.

The first companies presenting innovative products will seize a significant market share and maximize their profits.

The amount of global market of products containing peptides, bln \$



IDEAL PHARMA PEPTIDE

CHAPTER 1

SHORT PEPTIDES

SHORT PEPTIDES AND PEPTIDE COMPLEXES

Peptides are one of the newest directions in clinical and sports nutrition

As shown by scientific researches, protein molecules after ingestion are sequentially degraded as they pass through the gastrointestinal tract: first to large fragments, then to medium and small (short) and finally to separate amino acids.

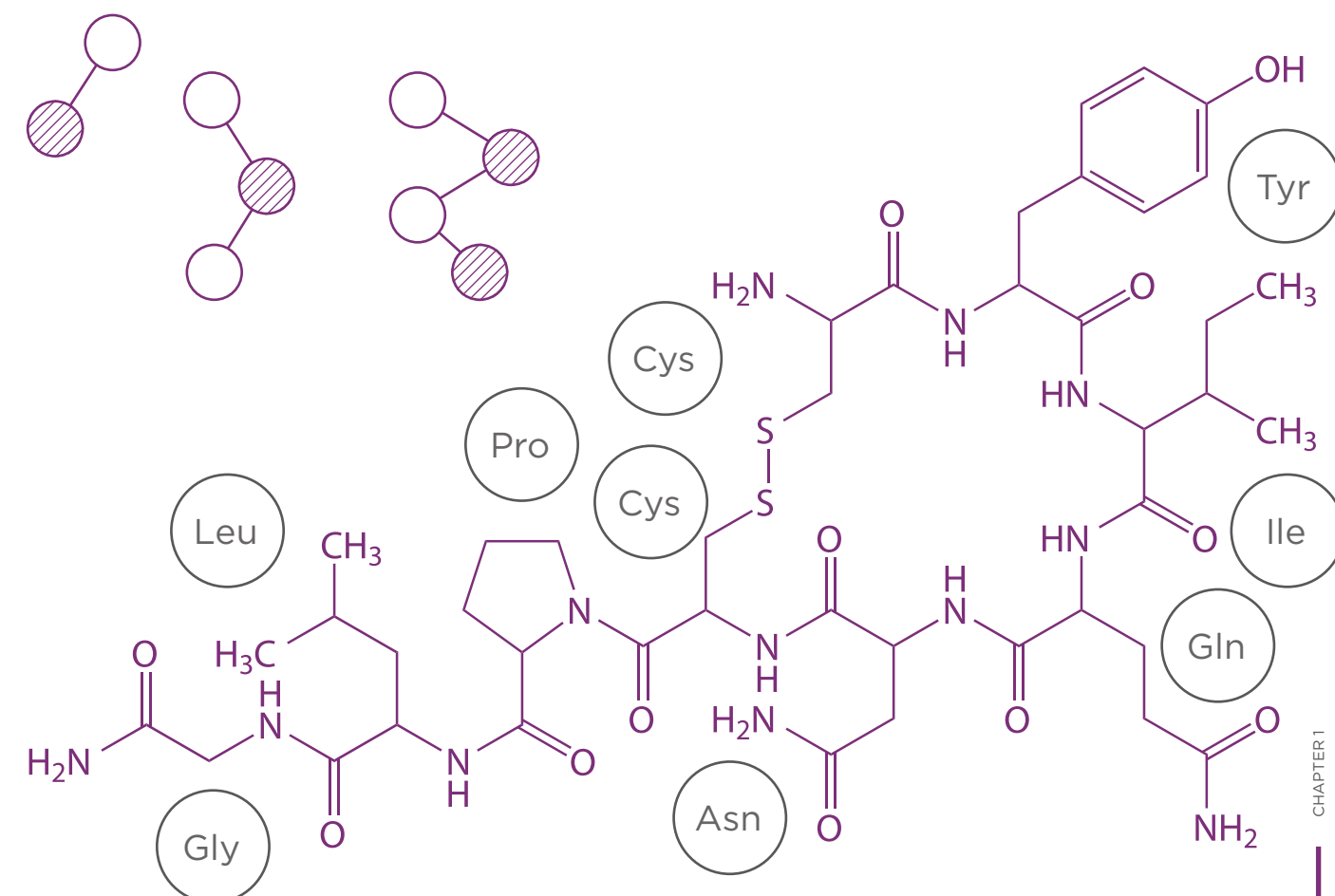
It was believed until quite recently that only amino acids get absorbed from the intestine tract into the blood system after digestion (acid and enzymatic cleavage). However, it turned out that short fragments of proteins can also be transported from the intestinal lumen to the blood and lymph, affecting all organs and systems of the body.

The discovery of short peptides significantly increased the possibilities of prevention and treatment of various diseases, as well as the opportunities of increasing functional capacities of athletes in different sports.

The structure of short peptides served as basis for creating biologically active food supplements (also known as dietary supplements) with targeted properties. They are used as independent food substances, are included into complexes with other nutrients (proteins, fats, carbohydrates, minerals and vitamins) and also form part of the composition of functional foods.

Peptides are a family of substances where molecules consist of amino acid residues

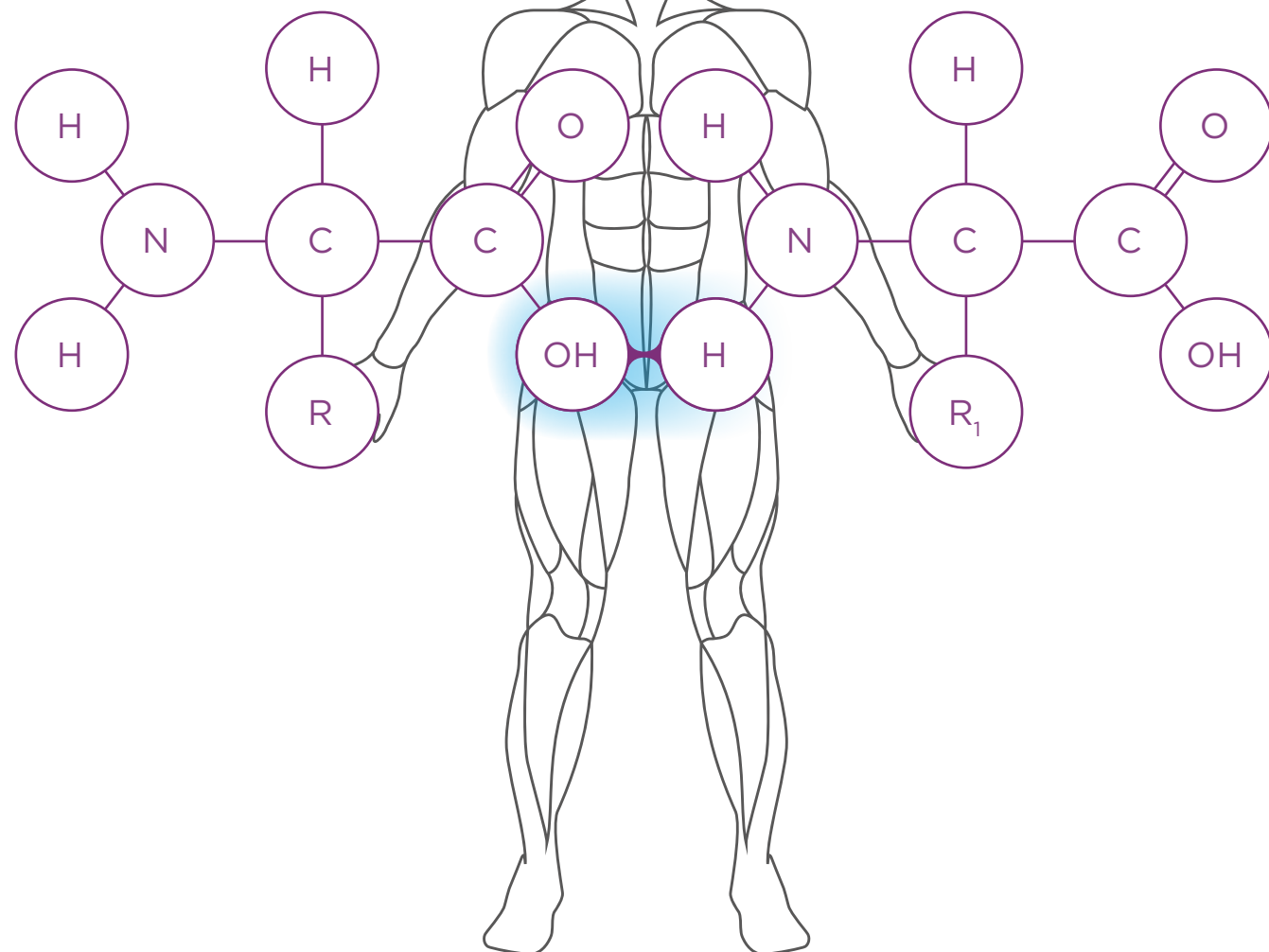
Peptides are structural components (fragments) of proteins, which are formed at various stages of their metabolism in the body, in particular, after ingestion with food or food supplements. In addition, they are synthesized inside the body during the process of biochemical transformations of amino acids.



Peptides are an important building material indispensable to the body of any person

Peptides and amino acids which form part of the peptide composition can be embedded into various cell formations, enzyme systems by contributing to the maintenance of the structure and function of all organs and tissues.

These properties are defined as "nutritious" ("nutritive"). In addition, they participate in the transfer of information from one cell to another, which ensures maintenance of homeostasis and preservation of the intercellular balance.



Peptides are regulatory molecules that restore the normal course of metabolic processes in case of their deviation from the usual parameters

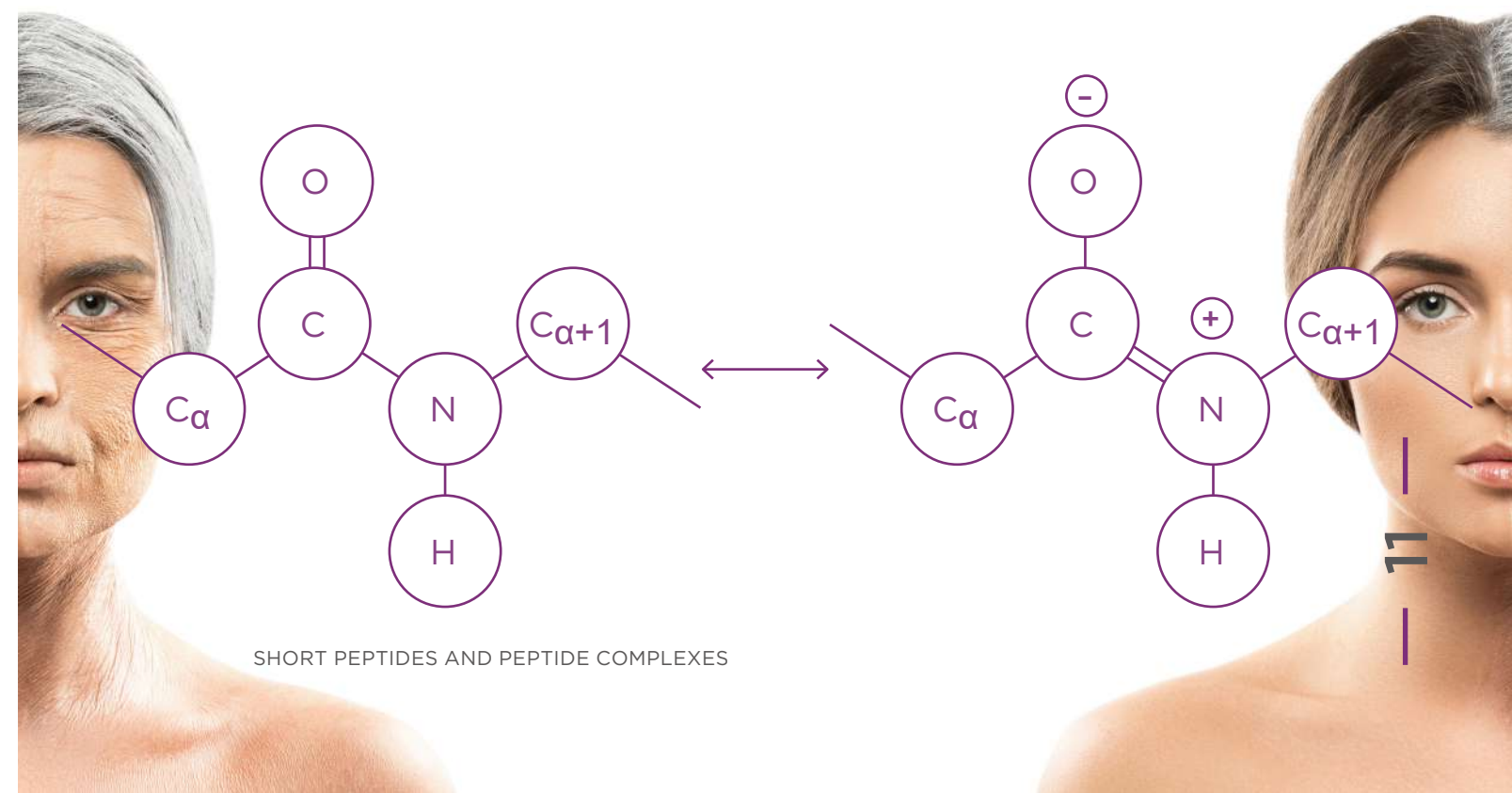
Diseases, impact of external stress factors, including physiological and mental stress in sports

Peptides actively fight against ageing processes of the body. Penetrating into the body, they activate the mechanism of cell repair, increase cellular resistance to the damaging factors including toxins. These properties are referred to as "regulatory non-nutritive".

According to the international definition, a bioactive peptide is a protein fragment that, along with nutritional properties, has specific biological functions.

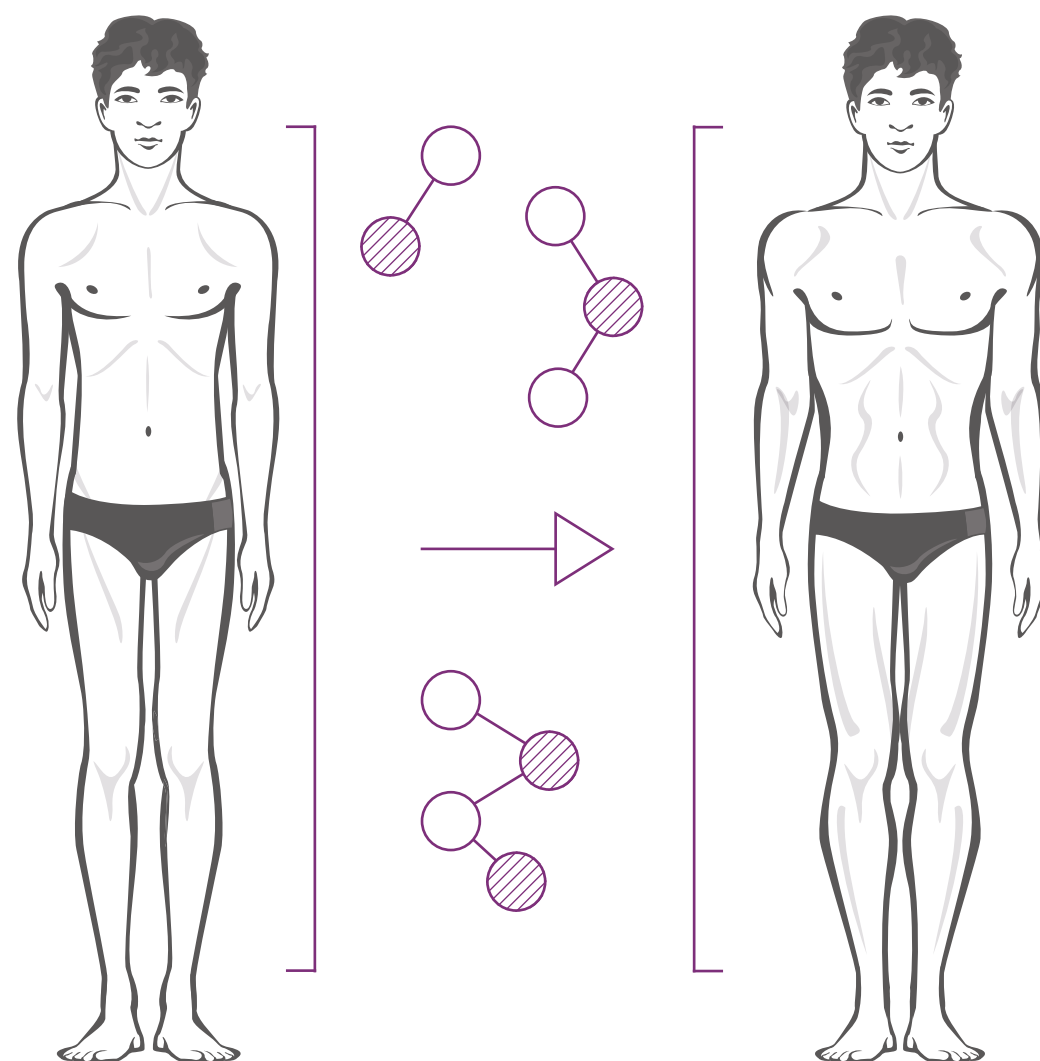
The list of such functions is sufficiently long, and, as a rule, is linked to the course of individual diseases and pathological conditions. Recently some short peptides have obtained confirmation of their efficacy in sports.

The general name for short peptides with targeted biological properties is "regulatory peptides". From the point of view of sports and clinical nutrition, they belong to the group of pharmaco-nutrients, i.e. substances that combine nutritional properties with regulatory.



Peptides stimulate protein secretion, which is especially important for athletes

If the body cannot cope with the task of building muscle mass independently, then it needs to be helped. For this very purpose scientists have created short peptides — they are based on "useful" amino acid residues, which actively help the body to recover after any physical effort.



Steroid drugs leaving an indelible imprint on the body condition and causing a number of serious side effects with long-term consequences, have been replaced by the "perfect" short peptides, true "helpers" of any athlete

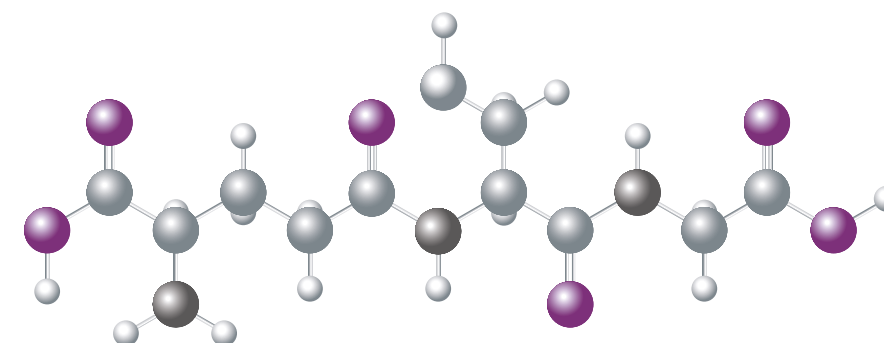
Short peptides used in sports include di-, tri- and tetrapeptides, containing respectively two, three or four amino acid residues. They can be obtained both from natural proteins through enzymatic hydrolysis as well as synthetically. The safest are the peptides produced in vitro. They don't contain any harmful additives of animal origin: viruses or other foreign "agents".

There are as well Intermediate products between proteins and short peptides which are called deep protein hydrolyzates, in which the share of short peptides can reach 80%.

During recent years, very intensive development has been achieved by the enzyme technology of obtaining deep hydrolyzates from not only milk proteins so popular in sports, but also from vegan proteins: pea proteins, rice, etc.

The following short peptides are the mostly common ones to be used in sports as food supplements: glutathione (tripeptide consisting of glutamic acid, cysteine and glycine), dipeptides L-alanyl-L-glutamine and glycyl-L-glutamine, chelate compounds of dipeptides with magnesium and other metals.

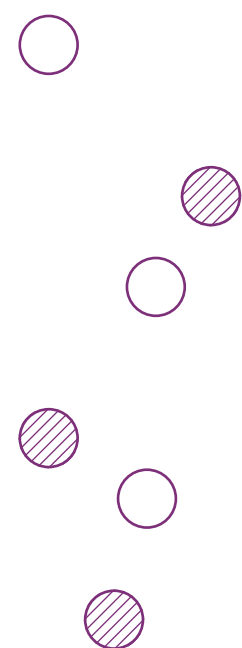
Glutathione



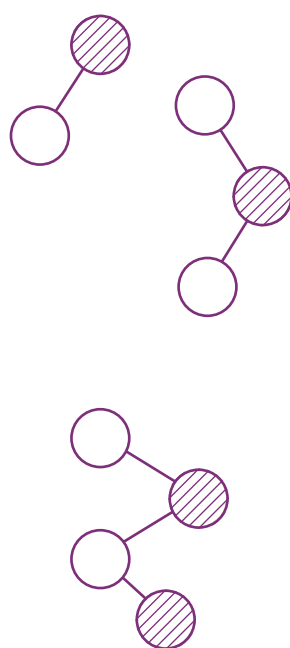
Peptides are substances with molecules consisting of two or more amino acid residues

The amino acid residues form together peptide bonds. This is a chain of physiologically active substances that play an important role in the metabolic and regulatory processes in the human body.

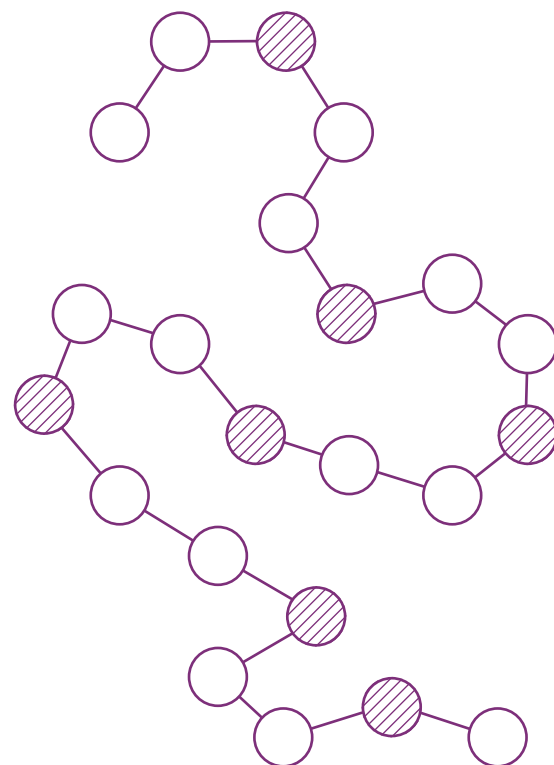
Amino acids



Peptides



Protein



Polypeptides are "long" peptides, the sequence of which consists of 50 or more amino acid residues

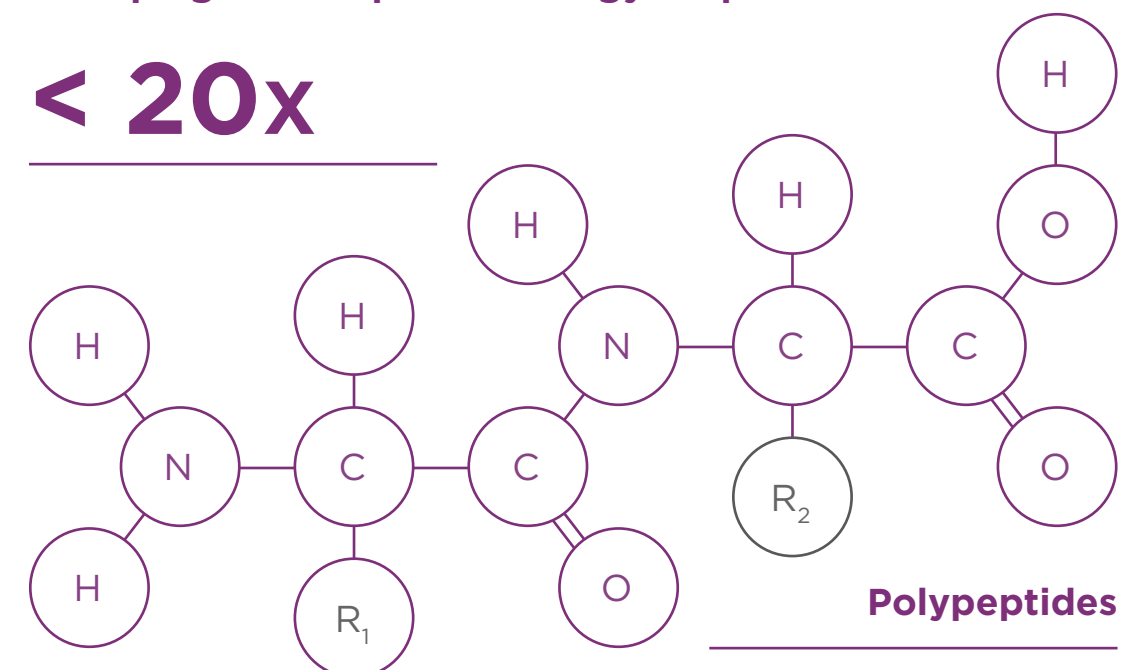
The intake of the so-called long peptides has a bad effect on the state of the body, which perceives such a long chain of molecules as a foreign substance.

Moreover, widely advertised long peptides are often fragments of the growth hormone, require to be injected and are prohibited by the World Anti-Doping Agency (WADA) for the purpose of nutritional metabolic support (NRM) of athletes.

The only acceptable option is the use of short peptides in the form of dietary supplements alone or as part of a functional diet.

Short peptides have become a safe alternative to doping steroid pharmacology in sports

< 20x



Polypeptides

> 50x

The peptide trend in clinical and sports nutrition is one of the most promising in the world

For example, development of cooperation plans during 2018 between the Swiss food and drinks giant "Nestlé" and the Irish company "Nuritas" over creating a whole network of bioactive peptides for various important targeted tasks in medicine and sports.

The cooperation will be based on Nuritas innovative technologies using the DNA analysis and artificial intelligence to predict, construct and validate chemical structures of peptides with specified properties from food sources.

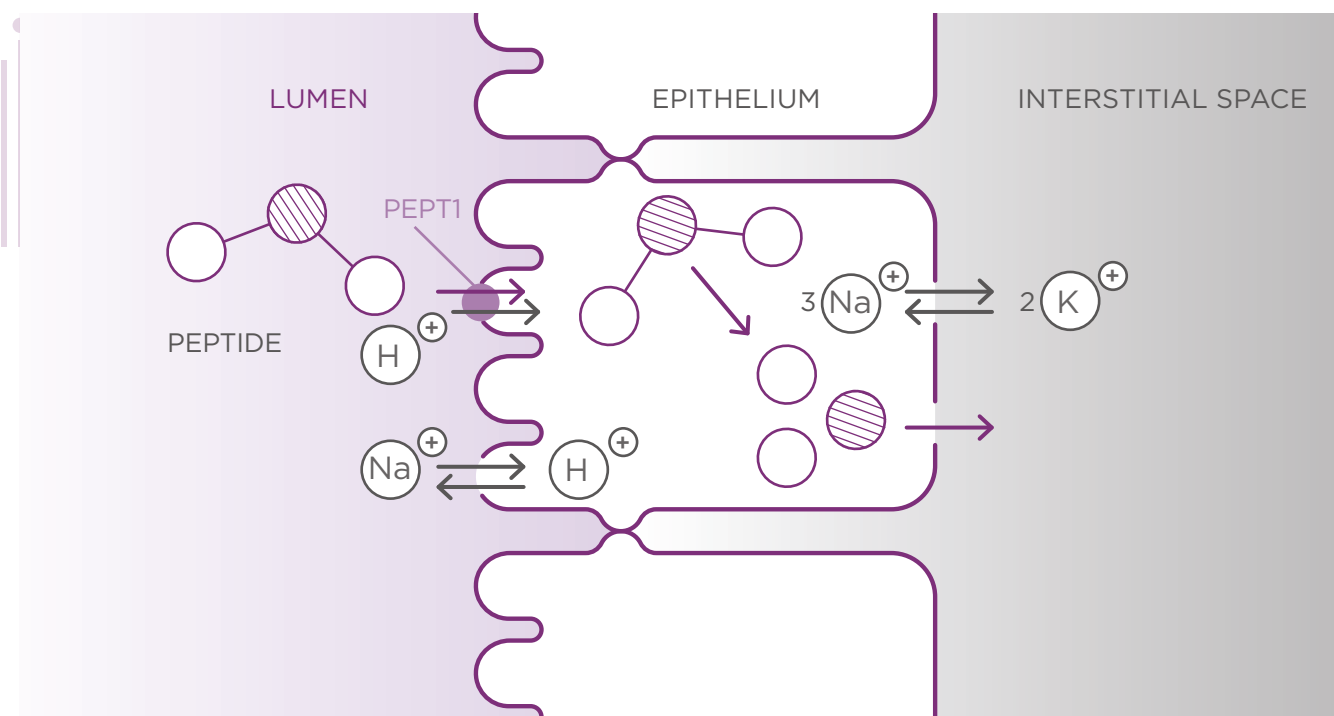


A distinctive feature of short peptides is the existence of an intrinsic system of transport through the intestinal paries into the blood

After ingestion and penetration into the intestinal lumen, short peptides are captured by the epithelium transport protein PEPT1 and are transferred unchanged to the blood and lymphatic systems.


This allows short peptides to regulate a number of brain functions and to adapt the body to the action of physiological and psychological stress.

This process is faster than even the transfer of individual amino acids. Further, short peptides are delivered to the brain with the blood flow, where they are also transported by the protein PEPT2 directly to the structures of the brain.



SHORT PEPTIDES AND PEPTIDE COMPLEXES

Over the past 10 years short peptides have enjoyed positive results from the point of view of evidence-based medicine¹ in a number of sports: from endurance to strength disciplines



Short peptides are now part of dry mixtures, sports drinks, functional food, sports bars etc.

An important feature of short peptides is the ability to accelerate and intensify the intestinal utilization of proteins, fats, carbohydrates, individual amino acids and fatty acids, vitamins and minerals

Scientific studies have shown that di- and tripeptides accelerate recovery, reduce micro damage and soreness of muscles in the post-training period.

Therefore, short peptides in most cases are not applied separately, but in combination with amino acids, protein hydrolyzates, substances that stimulate muscle growth and development (creatine, beta-alanine, BCAA, etc.).

Peptide complexes are becoming increasingly popular among athletes due to the universality of the action.

1 — randomized double-blind placebo-controlled studies

IDEAL PHARMA PEPTIDE

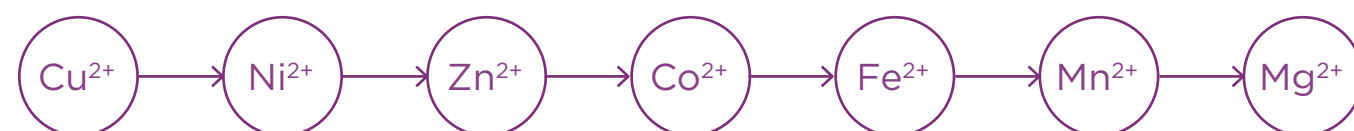
CHAPTER 2

PEPTIDE COMPLEXES

SHORT PEPTIDES AND PEPTIDE COMPLEXES

One of the most modern, but still little developed directions in creation of peptide complexes is the use of chelate compounds of short peptides

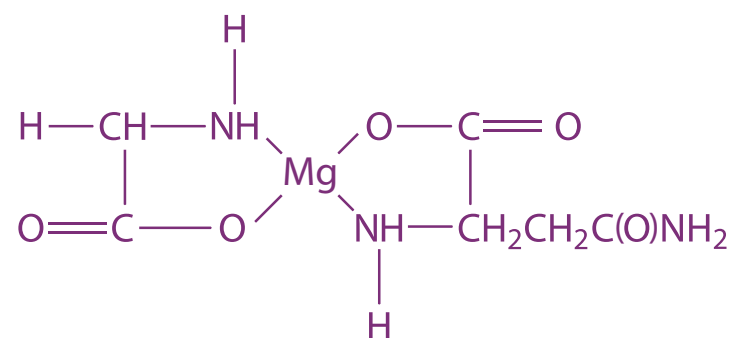
Amino acids and short peptides can form strong chelate complexes with bivalent metal ions. The stability of the complexes changes in the following sequence:



From the point of view of the science of sports nutrition, a full course intake of each chelate compound based on a short peptide has several purposes:

1. increasing the peptide's bioavailability (improving absorption, transport and assimilation by the body); reduction of the minimum effective dose to obtain the final result (less chance of unwanted side effects);
2. increasing the physico-chemical stability of the product;
3. prevention of microelementoses (insufficiency of a micronutrient in the body);
4. enhancing the positive effect of peptides and amino acids on the state of muscles.

The chelate compound of magnesium and glycyl-L-glutamine



Short peptide complexes — one of the options of creating personalized nutrition in medicine and sports

The future of nutrition for people who care about their health is in the choice of such foods and dietary supplements that correspond to the maximum extent to the genetic and phenotypic characteristics of their body.

During the last 2-3 years, many conferences, symposia and congresses on personalized medicine and nutrition have been held.

They were attended by international experts of dietetics, nutritional science, gastroenterology, personalized medicine, life sciences and other spheres involved in the creation of technologies of saving health and of preventive medicine.

An important regulatory role of peptides in ensuring metabolism in the body and dependance of this effect on genetic factors and on the way of life of an individual have been confirmed.

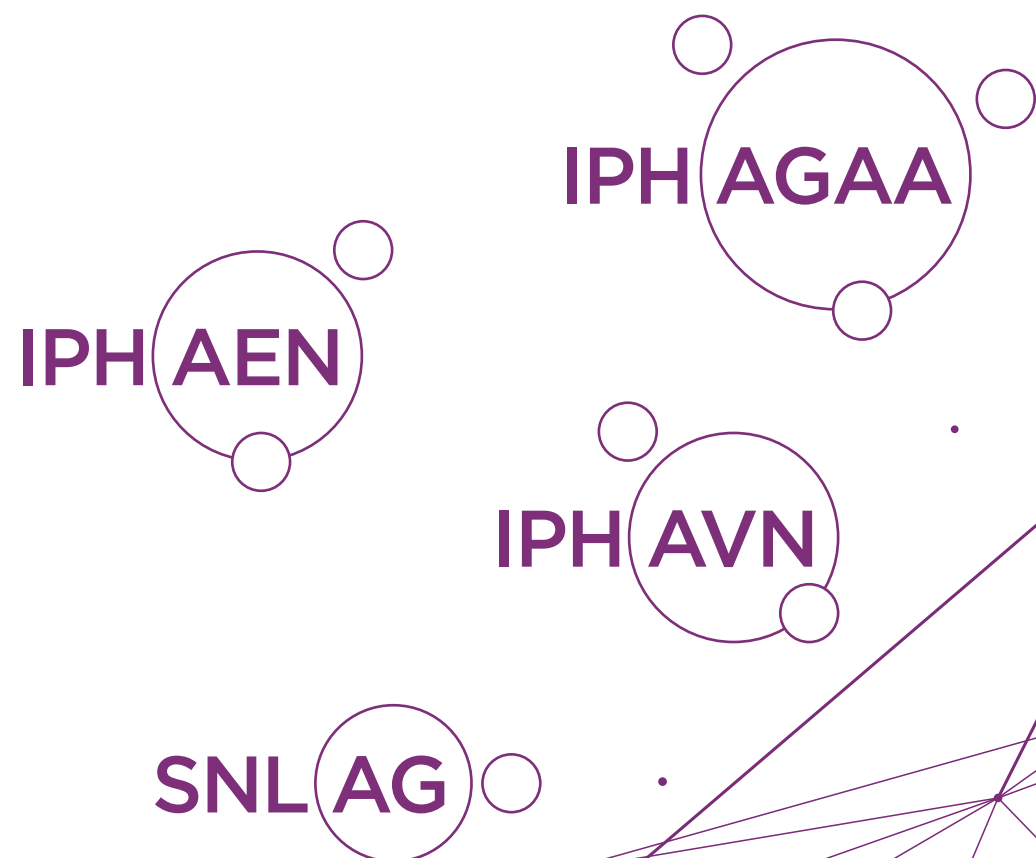


SHORT PEPTIDES AND PEPTIDE COMPLEXES

The peptide complex, properly selected according to its qualitative and quantitative composition, is one of the most important structural components of nutritional and metabolic support in sports and clinical medicine

Such complexes act as "catalysts" for the nutritional action of proteins, fats and carbohydrates (macronutrients), eliminating energy and nutritional deficiencies in organs and tissues and ensuring optimal functioning of the body.

Development and introduction of peptide complexes into practice is the present and future of our medicine.



SHORT PEPTIDES AND PEPTIDE COMPLEXES

CONTACTS

GERMANY

📞 + 49 617 285 06838
📍 Ferdinandstr. 11 Bad Homburg
✉ sale@ideal-pharma-peptide.com
🌐 www.ideal-pharma.de

RUSSIA

📞 +7 800 777 3828
📍 1-й Тружеников переулок 17, Москва
✉ sale@ideal-pharma-peptide.com
🌐 www.ideal-pharma.ru

CHINA

📞 + 86 155 021 03091
📍 116 Shimen Yi Street, Jingan Area, Shanghai
✉ sale@ideal-pharma-peptide.com
🌐 www.ideal-pharma.cn

USA

📞 +1 908 727 8000
📍 145 Wyckoff Road, Suite 106 Eatontown, NJ
✉ sale@ideal-pharma-peptide.com
🌐 www.ideal-pharma.us

