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CLINICAL AND PHARMACOLOGICAL CHARACTERISTICS OF THE HORSE PLACENTA (review)

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Throughout history, whether in the East or the West, we hear of the futile struggles of the rich and powerful to seek out life-extending elixirs whatever the cost. Well, here in the 21st century, while we still can't perform miracles of health and beauty, an "elixir" that will aid both health and beauty is just now coming into the limelight. That elixir is "Placenta Extract".

The clinical and pharmacological properties of the horse placenta extract are due to its composition, characterized by the presence of natural ingredients, which mean there are no concerns about side effects, giving you peace of mind. Placenta Extract is especially effective for disorders of the nervous system, allergies, and lifestyle illnesses, which are often neglected by western medicine. It is also surprisingly effective for skin problems such as blemishes, wrinkles, and acne.

Placenta extract is one of the popular beauty ingredients used these days. It has aging care properties so used in many aging cosmetics and supplements. Benefits and properties of horse placenta were found according to articles review. This article introduces the effect of placenta and placenta extract as cosmetics and why horse placenta is more often used. The horse placenta is a mixture of proteins, fats, carbohydrates, minerals and vitamins that triggers the body's anti-aging mechanisms. It is a placental cosmetic complex based on bioactive signal molecules (growth factors) isolated from the placenta of horse origin due to innovative bio-technologies. The placenta of the horse is unique balance between quality and quantity of amino acids, the contents of which are more than pig placenta.

Keywords: equine placenta, health, extract, placenta extract, amino acids, composition.

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Т Ұ Ж Ы Р Ы М

ЖЫЛҚЫ ПЛАЦЕНТАСЫНЫҢ КЛИНИКАЛЫҚ ЖӘНЕ ФАРМАКОЛОГИЯЛЫҚ СИПАТТАМАСЫ (әдеби шолу)

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Ежелден бері, не Шығыс не Батыс болсын, бай және қуатты адамдар құны қаншама көп болса да өмір эликсирін іздеп келеді. Бірақ қазіргі уақытта денсаулық пен сұлулық саласында ғажайыптар жасауға әлі де мүмкін емес болғандықтан, енді "эликсир" назарға алынды. Бұл эликсир – плацента сығындысы.

Жылқы плацента сығындысының клиникалық және фармакологиялық қасиеттері табиғи компоненттердің болуымен сипатталады, бұл жанама әсерлердің жоқтығын білдіреді, бұл сізге жан тыныштығын береді. Плацента сығындысының жүйке жүйесінің ауруларына, аллергия және жиі мән берілмейтін басқа да ауруларға бағытталған тиімді әсері бар. Бұл сондай-ақ пигментті дақтар, өжімдер және безеу сияқты тері мәселелерін шешеді.

Плацента сығындысы бүгінгі күні пайдаланылатын танымал сұлулық ингредиенттерінің бірі болып табылады. Оның жасартатын қасиеттері бар болғандықтан түрлі косметикада қолданылады. Жылқы плацентасының артықшылығы мен қасиеттері туралы мақала қарастырылғанда сәйкестіктер табылды. Бұл мақалада плацента сығындысының қасиеттері және неге жылқы плацентасы жиі қолданылатыны туралы мәліметтер келтірілген. Жылқы плацентасы құрамында түрлі ақуыздар, майлар, көмірсулар, минералдар мен витаминдер қоспасы бар. Бұл плаценталық косметикалық комплекс, биологиялық белсенді молекулаларына негізделген (өсу факторлары), инновациялық биотехнологиялар арқылы плацентадан бөлінген. Жылқы плацентасының аминді қышқылдары салыстырмалы түрде шошқа плацентасына қарағанда саны мен сапасы жағынан артып түседі.

Негізгі сөздер: жылқы плацента, денсаулығы, сығындысы, плацента сығындысы, аминқышқылдар, композиция.

Р Е З Ю М Е

КЛИНИЧЕСКАЯ И ФАРМАКОЛОГИЧЕСКАЯ ХАРАКТЕРИСТИКА ЛОШАДИНОЙ ПЛАЦЕНТЫ (обзор)

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На протяжении всей истории, будь то на Востоке или на Западе, мы слышим о бесполезной борьбе богатых и могущественных, которые ищут жизненные эликсиры независимо от стоимости. Но в 21 веке все еще невозможно творить чудеса для здоровья и красоты, теперь только в центре внимания «эликсир», который поможет как здоровью, так и красоте. Этот эликсир «Экстракт плаценты».

Клинические и фармакологические свойства экстракта лошадиной плаценты обусловлены его составом, характеризующимся наличием натуральных ингредиентов, это означает, что побочные эффекты отсутствуют, это дает вам душевное спокойствие. Экстракт плаценты особенно эффективен при расстройствах нервной системы, аллергии и других болезнях, которые часто игнорируются. Это также эффективно при проблемах кожи, таких как пигментные пятна, морщины и угри.

Экстракт плаценты является одним из популярных ингредиентов красоты, используемых в наши дни. Он обладает антивозрастным свойством, который используется во многих антивозрастных косметических средствах и добавках. Преимущества и свойства плаценты лошади были найдены в соответствии с обзором статей. В этой статье представлены эффекты экстракта плаценты и почему лошадиная плацента чаще используется. Плацента лошади представляет собой смесь белков, жиров, углеводов, минералов и витаминов, которые запускают антивозрастные механизмы. Этот плацентарный косметический комплекс, основан на молекулах биологически активных сигналов (факторы роста), выделенных из плаценты лошадиного происхождения с помощью инновационных биотехнологий. Плацента лошади - уникальный баланс между качеством и количеством аминокислот, содержание которых больше, чем у плаценты свиньи.

Ключевые слова: лошадиная плацента, здоровье, экстракт, экстракт плаценты, аминокислоты, состав.

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Placenta has a lot of enzymes, amino acids, various peptides; this is the reason why placenta is being eaten by some of the animals, thereby restoring their lost energy during parturition. It also has anti-inflammatory effect, improves cell regeneration, supports the body of women during menopause and improves blood circulation [1]. They improve the general state of human health, improves metabolism, increases the immune system, stabilizes the pressure, improves the psycho-emotional state of a person, contributes to the normalization of the internal organs.

These days, we invent new type of drug which is extracted from horse placenta and they are used as an adjunct in the treatment of the liver, bladder, skin diseases, diseases of the ENT organs, diseases of the musculoskeletal system. Also placenta helps to faster recovering after diseases, and professional athletes – after competitions and trainings. It is useful for hair growth by increase of growth factor [2].

Aim of this article to study the researches and make the conclusion of horse placenta according to review of article and its composition.

Table 1 - Composition of the horse placenta according to HTTC (Health Technology Transfer Center) LYCORIS Co., Ltd. [8, 9]

Composition	Percentage (%)
1. Amino acid	83.300
2. Growth factor	1.050
3. Cytocine	0.230
4. Glycosaminoglycans	3.420
5. Uronic acid	0.110
6. Collagen peptide	4.340
7. Chondroitin sulfate	2.350
8. Sialic acid	0.040
9. Hyaluronic acid	3.800
10. Others (vitamins B12,B6,A,K,C,E.)	1.360
Total	100.00

RESULTS AND DISCUSSION

Effects of placenta:

1. *As placenta contains abundant amino acids*, NMF (natural moisturizing component) which play a major role in the barrier function as well as moisturizing effect of placenta thereby keeping the body moisturized.

2. *In placenta, growth factors* such as EGF (epidermal growth factor) works on epidermis and FGF (fibroblast growth factor) on dermis (table 1).

3. *Placenta has a function to prevent spots by inhibiting the enzyme tyrosinase* which plays a main role in process of making melanin pigment. So this is used in skin-whitening cosmetics.

Table 2 - Composition of mineral components in horse, pig, and human placenta according to North Life Co., Ltd.

Mineral component	Horse	Human	Pig
Ca ²⁺	50–135	28–34	112–123
P ⁺	20–121	14–43	59–119
K ⁺	25–87	53–62	106–163
Mg ²⁺	3–12	3–4	7–12
Na ⁺	8–85	10–18	58
Cl ⁻	19	60–63	100–119
Fe ²⁺	0.02–0.15	0.04–0.2	0.03–0.1
Zn ⁺	0.09–0.64	0.2–0.4	0.3–0.55
Cu ²⁺	0.02–0.11	0.02–0.06	0.01–0.08

Table 3 - Rich of amino acids

Amino acid	Horse	Pig	Functions
Arginine	8.32	6.1	Erection promotion, concentration improvement, nutrition
Lysine	5.03	5.5	body fat lose
Histidine	4.02	2.4	Fat combustion, blood circulation promotion
Phenylalanine	3.44	3.5	Appetite inhibition, metabolism enhancement
Tyrosine	2.03	2.03	Concentration improvement, promotion growth hormone secretion, erection promotion
Leucine	6.49	6.6	Fatigue restoration, muscle strengthening
Isoleucine	2.47	2.59	Fatigue restoration, muscle strengthening
Methionine	1.21	1.8	Fat digestion
Valine	4.07	3.5	Growth promotion
Alanine	8.47	6.2	Nutrition, fat combustion
Glycine	18.05	10.5	Maintaining of skin elasticity, anti-aging, muscle strengthening
Proline	10.31	6.4	Major ingredient of collagen
Glutamic acid	10.21	10.9	Promotion of fatigue restoration, inhibition of carbohydrate absorption
Serine	4.36	3.7	Nerve cell activation, making skin glossy
Threonine	3.00	3.3	Growth promotion, fatty live inhibition
Aspartic acid	7.79	7.7	Promotion of liver function, fatigue restoration, physical strength enhancement
Cystine	0.73	1.2	Whitening (inhibition of melanin pigment)

4. *Antioxidant action.* Placenta has antioxidant action to eliminate active oxygen and delay the aging of skin. Activated oxygen, essential which has a role to repel bacteria and others invading the body [3]. Placenta contains antioxidant enzyme SOD (superoxide dismutase), vitamin C, E so antioxidant effect can be expected.

5. *The healing properties of the placenta.* During pregnancy, the placenta is responsible for the supply of nutrients from the mother to the fetus. In animal world, placenta is eaten by Females to restore their nutrients, thereby it used to human health [3, 4, 5].

These are essential ingredients that people originally have, and even if they use placenta in cosmetics, they reach the stratum corneum of the epidermis but not to the dermis.

Notes: Based on minimal and maximal values found in literature; in some of the references no specification was given. When placentas of horse's and human were compared, their mineral components are the same with a slight difference as mentioned above [4, 5, 6].

Horses Placenta contains more amino acids than other placentas. This is the reason for the popularity of horse placenta. There are also six kinds of essential amino acids of the type not found in pig placenta [7, 8].

The exceptional value of amino acids for all living things is determined by the huge role that proteins play in all processes of life without exception. In the human body, most amino acids are synthesized in the liver and the rest are acquired through diet. The peculiarity of horse's placenta is that it contains the whole complex of essential amino acids, they include:

Histidine – protects the body from the damaging effects of radiation, promotes the removal of heavy metals;

Isoleucine – necessary for the synthesis of hemoglobin, stabilizes and regulates blood sugar levels, is involved in the process of muscle tissue recovery;

Lysine – affects the absorption of calcium, is involved in the synthesis of antibodies, hormones, enzymes, collagen and tissue repair, has an antiviral effect on the pathogens of herpes and SARS;

Methionine - is necessary for the synthesis of nucleic acids and collagen, is involved in the processing of fats, preventing their deposition in the liver and in the walls of blood vessels, neutralizes toxic metals and chemical allergies;

Phenylalanine - is indispensable in the treatment of arthritis, depression, migraine, obesity; threonine-is necessary in maintaining normal protein metabolism, stimulates the immune system, is indispensable in the synthesis of collagen and elastin, takes an active part in lipid metabolism;

Valine - is involved in the maintenance of normal nitrogen metabolism in the body, it is necessary to restore damaged tissues [7, 8, 9].

What is the difference between horses placenta and pigs and sheep?

Pig Placenta

The placenta that is the most widely distributed in Japan is a pig placenta. Pigs can have more than ten births in one birth, and births can be given twice a year. For that reason, it is a great merit that placenta extraction efficiency is good and it can be provided relatively inexpensively. Pork placenta is said to be slightly lower than the horse placenta, but it is said to be famil-

iar to the body and the skin, close to the human body and skin and structure. On the other hand, pigs have a delicate aspect, so there are bad environments to grow, and there are disadvantages that are susceptible to disease if there is stress.

Therefore, vaccination and vaccines are administered more often than horses and sheep. It is unknown how much this affects the safety of placenta, but more thorough safety management is needed. In case of domestic production, the safety of placenta extract extracted from SPF pig raised / produced under thorough management so as not to have pathogenic bacteria under the sanitary control standard established by "Japan SPF Swine Association" It is considered high. SPF is an abbreviation for Specific Pathogen Free, meaning it does not have pre-specified pathogenic bacteria.

In addition, since overseas Danish pigs are raised with strict management, safety is considered high [10,11,12].

Sheep placenta

For those that can not be produced domestically and that can not be denied the possibility of sheep's disease "scrapie disease" that resembles mad cow disease, there are import restrictions by regulation, and distribution compared to pig and horse placenta Because the amount is small, not so much awareness is high. Meanwhile, sheep placenta is relatively popular in the United States and Europe. The reason is that sheep placenta has amino acid composition close to humans, easy to familiarize to the body and skin, excellent permeability, and so on. However, unlike the placenta of pigs and horses at the present moment, it is not covered by JHFA (Japan Health and Nutrition Food Association). Although they saw the features of horse placenta, pig placenta, sheep placenta, horse placenta, though it has a disadvantage of high price, think that it is a good choice as an aging care cosmetic ingredient from a comprehensive point of view [12]. Let's know some of its characteristics:

The concentration of placenta extract is high

Horses are less susceptible to disease than pigs, and from the price and use of each individual one health management is thoroughly done. Therefore, vaccines and other drugs are given less chance than pigs. As a result, horses can simplify the process of extracting placenta extract. In other words, since there are few sterilization processes of impurities, more active ingredients can be kept in placenta extract [13,14].

Horse placenta is highly safe

Horses do not suffer from diseases such as mad cow disease and cysts found in cows and foot and mouth disease. Also, since horses are high in temperature and parasites are less difficult to live in, there is no worry of parasites compared to pigs.

In particular, the domestic thoroughbred is under strict control from production to training.

Therefore, it can be said that there is less anxiety in terms of safety than pigs and sheep.

CONCLUSION

They improve the General state of human health, accelerating metabolism, increasing the protective functions of the immune system. Also, the horse placenta stabilizes the pressure, improves the psycho-emotional state of a person, contributes to the normalization of the internal organs. Often drugs with horse placenta are used as an adjunct in the treatment of the liver, bladder, skin diseases, diseases of the ENT organs, diseases of the musculo-

skeletal system. Also placenta helps to recover faster after diseases, and professional athletes — after competitions and trainings. At the moment, only two species of animals are allowed to use placenta in Japan: horses and pigs. There are several reasons for choosing horse placenta: the horse placenta is safer, due to the fact that the body temperature of horses is higher than that of pigs, so most parasites die in the body of horses; secondly, the quality of the horse placenta is higher, since the amount of nutrients is concentrated on one foal, while pigs-10-12 pigs; thirdly, it's composition is unique and we can't find analogue of placenta neither artificial nor natural.

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