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White Papers

HUMANOFORT™

Romanian 17-Keto Sulfate Booster

Is Bodybuildings New Pro-Anabolic Miracle Formula A Legal Drug??

The space shuttle, television, computers and the internet... some of the inventions that have shaped our world, and continue to grow our society at a fantastical speed. In fact it's often been said that we have accomplished more in the past century than in all of history, combined!

In the same way, the discovery of growth hormone, anabolic steroids, Creatine, Ephedrine and cutting-edge proteins, to name a few, have shaped the world of bodybuilding in ways no one could have imagined. There is no denying that these agents can do for the diligent bodybuilder in months, what previously took years. Think about it. Could our beloved Arnold, in 1970's Olympia champion form, command that stage now? Probably not. More likely he would be fighting for his life at one of the better amateur competitions.

The use of these growth agents have very quickly turned us into big, bad boys and girls, hungry for the next miracle that science can offer. Well get ready, because that time may be right now.

Brian Batchelor is one of the world's experts on steroids and their applications for athletes. He has taken his knowledge of biology, chemistry and real world results, and introduced many powerful supplements into bodybuilding. His research into non-hormonal anabolic supplements such as Tribulis Terrestris, Chrysin and Methoxyflavone has changed the face of how we look at gaining muscle.

Brian has worked with many of the top Sports Nutrition manufacturers, and his skill has made him the secret weapon of top pro bodybuilders. Perhaps you're familiar with Brian from his many popular articles on steroids, nutrition and training. Although grounded in the fundamentals of clinical research, Brian is no chemistry geek sitting around test tubes all day waiting for explosions. He has trained some of the best powerlifters in the world; those huge monsters that lift railroad cars and pull tractor-trailers. Brian has been a bodybuilder and powerlifter himself since age 14, owns his own gym in England and won't allow anyone with less than 20" guns thru the door. Translation: If you want to grow, Brian's your guy!!

For the past year Brian has been working with a new compound called *Humanofort*. While unknown to most of us here, Humanofort has been the focus of intensive scientific study and clinical trials in Romania, where it is now registered as a drug. These studies have proven the amazing benefits of this natural compound containing standardized chicken embryo extract. By stimulating the adrenal glands, Humanofort helps the body to secrete natural steroids, including hormones that increase muscle gain and fat loss, reduce stress leading to muscle breakdown and slower recovery, increase vitality, act as a strong antioxidant, and help the body to maintain healthy skin, bone and muscle tissue.

Is Humanofort the muscle-building, fat loss, anti-aging supplement of this decade; a powerful, legal hormone regulator sold without a prescription? Can Humanofort move us from the platform on which Arnold stood not twenty years ago, to an even higher level of physical conditioning than we enjoy as athletes today? To answer these questions and more we conducted an interview with our expert Brian Batchelor, who shared his perspective on the discovery of Humanofort, and what it means to the bodybuilding world.

Q. What exactly is Humanofort?

A. Humanofort is a cutting-edge embryonic peptide product developed by an Eastern European (Romania) biotechnology company. Derived from chicken embryos under highly specialized conditions, the oligopeptides offer multiple health benefits.

Embryotherapy has been used clinically for a very long time, immunological conditions and various age-related disorders have been the usual areas of application.

Q. What can I expect to see or feel from using Humanofort?

A. The following potential benefits have been associated with regular use:

- Increased lean muscle tissue.
- Decreased body fat.
- Reduced physical and emotional stress.
- Improved recuperation.
- Increased sex drive.
- Increased fertility.
- A slowing down of the aging process.
- Improved immune function.
- Lower triglycerides.
- Improved sleep quality.

Q. How are all these achieved?

A. Science has determined that these embryonic peptides impart their main benefits via elevation of 17-ketosteroid levels in the adrenal glands. In fact, Humanofort has been shown to raise these levels by as much as 68%! Increased 17-ketosteroid levels will mean increased lipid metabolism and improved anabolism, through an elevation of androgens and a decrease in the catabolic hormone cortisol. The documented antioxidant properties will also limit exercise-induced free radical damage to muscle tissue.

Q. I am a natural bodybuilder and I've used various products in the past to elevate my testosterone levels. I've tried prohormones and several herbal products, mostly without any noticeable effect. Tell me what's so different about Humanofort.

A. If you have chosen not to use steroids for health reasons, then Humanofort has numerous advantages over other approaches to natural testosterone elevation, the main one being that it actually works! In one study alone, Humanofort elevated testosterone levels by 83% in 10 out of 12 patients!

Prohormones, whilst legal, are not the ideal choice for the natural athlete who will be concerned about suppression of his own natural testosterone production. Most prohormones fail to deliver when used in anything short of hazardous levels. At these levels, the same concerns that deterred the athlete from steroid use start to apply. Recent research indicates that, more often than not, most prohormone use only results in elevation of unwanted estrogen.

The herbal approach can also present risks. Currently, tribulus terrestris represents the only legitimate herbal testosterone booster. While many companies claim they are using powerful extracts of this herb, the facts are that unless the material is standardized for protodioscine it will do absolutely nothing. There are literally only one or two companies in the world who have paid this much attention to detail.

Currently, Maca (*Lepidium meyenii*) and dopa bean (*Mucuna pruriens*) are popular additions to any pro-testosterone formula. Unfortunately, the only thing discovered by any bona fide studies on either of these is that they are both powerful anti-fertility agents! Hardly a way of boosting your virility.

Of course, we also have those “powerful” Chinese herbs that have been “traditionally used for thousands of years”. Unsupported by any scientific research, they belong with those other classics like rhino horn and tiger penis! Although it is possible that some herbs may have aphrodisiac properties, this is most likely through stimulant activity or an impact on dopamine and not an effect on testosterone. On the contrary, the use of such herbs often leads to a decrease in testosterone through catecholamine elevation or interaction with liver enzymes and subsequent reduction in precursor androgens.

Clearly, Humanofort is the scientific approach to testosterone elevation, totally free of any negative side effects.

Q. What about someone who is using steroids. Would they benefit from this product?

A. Definitely. Prolonged steroid use is known to lead to a reduction in 17-ketosteroid production. Humanofort offers an ideal post-steroid aid in re-establishing natural hormone production.

Q. Is Humanofort supported by any clinical studies?

A. Humanofort is supported by more clinical studies and scientific principles than any other supplement currently available! Don't forget, this is a product intended for clinical application. The European Medical community honoured Humanofort in October 1998, at the 47th World Exhibition of Invention, Research and New Technology held in Brussels, Belgium.

Q. So is Humanofort available, and can I get it without a prescription?

A. While Humanofort is registered as a drug in Romania, here it is considered a natural supplement... at least for now. At press time it appears that two companies have seized the opportunity for Humanofort and have purchased all of the available material. Look for HUMANOVAR™ from GEN, and HUMANOFORT™ from Fitness Enterprise.

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The effects of oral administrated Humanofort on steroid hormones level and on oxidative stress of rugby players

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INTRODUCTION

Avian embryos are considered a delicacy and a healthy food in different area of the World. In China chicken embryos are an important ingredient of traditional food (1,2), in Philippine are famous balout and pingoes (3) (food based on duckling embryos), in Balkans chicken embryos was considered a food that increase man vigour (4).

In the early '60 in Romania chicken embryo extract was used to treat several cow diseases, including sexual disorders (5). Starting from these experiments was developed Humanofort A, a product based on a chicken embryo extract, standardized in peptides and designed to be oral delivered in human (6)_ The test on laboratory animals (rats and guinea pigs) shown that Humanofort A significantly increase the steroidogenesis (6). In this paper we present the effects of Humanofort A oral delivered on steroid hormones level and on oxidative stress of young health male subjects (rugby players) and we present some evidences that support the involving of growth factors in the action of Humanofort A.

MATERIAL AND METHODS

Chicken embryo extracts. The chicken embryos, aseptically removed from fertilized and incubated eggs, was homogenized with distillate water, defatted by counter current extraction with n-hexane and freeze-dried. The resulting powder was re-suspended in double distillate water, centrifuged at 10,000 g for 20 min (to avoid any further gel-chromatographic bed warping) and gel-chromatographed on a preparative columns (Sephadex G-10). The compounds from tractions included in chromatographic gel (with molecular weight under 10 kD) was unified and mixed with a crude embryo homogenate (to get a final ratio of 200 μ peptides to 1 mg protein).

The embryo homogenate enriched in peptides was mixed with additives (fillers, preservatives, anti-cakers, intestinal absorption enhancers, lubricants) and once again homogenized at high pressure (300 bar). The resulting homogenate was spray dried at low temperature. The total peptides / total protein ratio on peptide enriched homogenate and on spray-dried powder was checked using high performance gel chromatography. The spray-dried product was reconstituted in ultra pure water (obtained from MilliQ-Plus apparatus), centrifuged for 15 min at 15,000 g and high performance gel chromatographed on a Pharmacia-LKS apparatus, using a TSK G2000 SW column. The column was previously calibrated with bovine serum albumin (67kD), ovalbumine (42 KD), hemoglobin (18 kD) and cytochrome c (12,7 W). The gel-filtration was done during 30 min, with ultra pure water as mobile phase, at a flow of 0-5 ml per min. The separation process was UV monitored, at two different wave length (220 nm and 280 nm). The fractions with peptides (F2) retained on column and then eluted were unified. The ratio of peptides / protein content was calculated using protein peptide concentration determined by a modified Lowry method, using a Sigma kit (135656) in F2 and, respectively, whole product.

Human subjects and experimental procedure. 28 healthy male volunteers (rugby players, ages 20-32) were separated into three experimental groups - 8 person in control (placebo) group, 10 person in the group receiving 6 capsules of Humanofort daily and 10 person in a group receiving 12 capsules of Humanofort daily. In treated groups each patient received 2 (or 4) capsules of Humanofort A three time per day, 1 hour before meals, In control lot (placebo) patient received 2 capsules filled with eggs powder mixed with similar amounts of additives (fillers, preservatives, anti-cakers, intestinal absorption enhancers, lubricants) used in Humanofort A preparation. The product / placebo was administered for three weeks. The subjects had not received steroids preparations for at least two month prior to the Humanofort treatment.

Serum samples analysis. Serum samples, taken before and after treatment, were assayed for steroids hormones and for oxidative stress parameters. In order to establish baseline values for steroids hormones, samples taken just a day earlier to the first dose, were assayed. Samples taken on day 21 were used in the assays for comparison, and expressed as a percentage of baseline, In this way, the circulating levels of various steroids were determined for each patient at the beginning and at the end of the treatment in order to assess the effect of Humanofort administration, Assays were performed using commercial kits according to each manufacturer's instructions: Nichols Institute Diagnostics, USA (DHEA, DHEAS); Diagnostics Systems Laboratories, USA (androstenedione, testosterone).

The oxidative stress (OS) in blood was estimated using the following biochemical parameters: serum lipids peroxide (PxL), plasma ceruloplasmin (CP) and plasma (proteins) free thiols groups (-SH). The formula $OS = PxL - CP/SH$ was use to offer a quantitative evaluation of unbalance between the free radicals (estimated as their mean products, lipids peroxides) and the antioxidant capacity of blood (AO) defined as the ratio between free thiols groups and ceruloplasmin (assayed as oxidase activity). The lipids peroxides assessment (PxL) was done according to methods described by Carbonneau (9), the plasma ceruloplasmine was estimated by measurement of its enzymatic activity (oxidase activity) using Schosinkin and Lehman technique (10) and the proteic free -SH groups content in blood plasma was quantified by the Albini method (11). The experiment aims to establish the evolution of oxidative stress after the Humanofort treatment. In accordance with that each patient was its own control, the OS biochemical parameters being assayed before the treatment and after three weeks of treatment.

Biotest for Humanofort growth factors. For the biotest was used a Romanian diploid human cell strain, (CP-23, growth on usual Eagle BME culture medium supplemented with 10% foetal calf serum. The test was carried out on fibroblast cultivated in Barsky tube of 2 ml. The experiments was performed in the presence or, respectively, in the absence of tested embryonic; extracts. Humanofort powder was re-suspended in ultra pure water (1,10, w/v), centrifuged for 15 min at 15,000 g and then sterilized by micro filtration on Seitz ultra filtration device. The cell proliferation in vitro was estimated using the following methods: measurement of optical density at 24 hours during a 96 hours cycle of multiplication and cell numbering after trypsin elution and stained with tripan blue 0,4%. The mortality was estimated by counting the cell with tripan blue exclusion. Two kinds of experiments were made. in the first one the embryonic extract was tested on young cells (passage 20 ... 23) in complete culture media (including the foetal calf serum). The second type of experiments the Humanofort A extract was tested on incomplete culture media (without foetal calf serum) in an attempt to check the presence of growth factors.

Assay for IGF in Humanofort preparation. The Insulin-like growth factors (IGF-I and IGF-11) were estimated using radio receptor assays (RRA), with human placental membrane protein as the receptor source and rec IGF-I (human) (formally Somatomedin C) supplied by Bachem (Switzerland) as iodinated tracer. A typical RRA protocol was followed, incubating 100-250 mu.g of human placental membrane protein with tracer and standards or samples for 15 hours at 2-degree. C., then separating the bound and free ligand by centrifugation. Humanofort samples were prepared as previously presented for fibroblast biotest.

RESULTS AND DISCUSSIONS

The influences of Humanofort administration on steroids hormones are presented in tab.1. The results clearly show that, in healthy male volunteers, oral administration of Humanofort results in significantly elevated levels of DHEAS and androstenedione. The testosterone level is slightly increased, at the limit of statistical significance.

Tab. 1 - Influence of oral administration of Humanofort on the serum steroids

Assay	Placebo	Humanofort 6 cps/day	Humanofort 12 cps/day
DHEA	121.3 ± 138.9	89.75 ± 120.4	115.2 ± 33.8
DHEA-S	81.4 ± 18.1	14.3 ± 11.2	108.3 ± 10.45
Androstenedione	88.5 ± 123.3	137.3 ± 41.5	126.2 ± 32.6
Testosterone	102.4 ± 12.2	124.3 ± 21.2	135.3 ± 31.7

Measurements obtained at the end of the study were expressed as a percentage of baseline levels in each human subject prior to the first treatment with Humanofort. An average (±SD) of these percentage values were then computed for each group.

Humanofort A also modify the oxidative stress (tab.2). On rugby players the oxidative stress is bigger than the value measured in the healthy subject, with a moderate physical activity (11).

Table 2. Oxidative stress modifications in rugby players treated with Humanofort A

Treatment Group	Number of subjects	Lipids peroxides (PxL) ¹		Antioxidants (AO) ²		Oxidative stress (OS) ³	
		before treatment	after treatment	before treatment	after treatment	before treatment	after treatment
Placebo	8	3.55 ± 0.32	3.60 ± 0.14	4.55 ± 0.24	4.41 ± 0.16	0.78 ± 0.04	0.81 ± 0.02
Humanofort A @6 cps per day	10	3.63 ± 0.21	2.93 ± 0.18*	4.95 ± 0.12	6.18 ± 0.17*	0.73 ± 0.05	0.47 ± 0.08*
Humanofort A @12 cps per day	10	3.37 ± 0.12	3.09 ± 0.19	4.68 ± 0.19	6.16 ± 0.11*	0.72 ± 0.07	0.50 ± 0.05*

* Statistically significant against placebo for P<0.05

1 - Expressed in $\mu\text{moles/l}$ malondialdehyde; 2-AO is the ratio between the free thiol (-SH) in the serum protein, measured in $\mu\text{moles/l}$ and the ceruloplasmine (oxidase) activity, expressed in IU/l; 3 - OS = PxL/AO

Same results, of increasing of oxidative stress in sportsmen was registered by our team (12) and by an independent studies (13). The value of antioxidant in sportsmen serum are higher than in healthy subject with moderate physical activity. After Humanofort treatment these values of serum antioxidant significantly increased. Consequently the value of oxidative stress (a ratio between the lipid peroxides, P_xL, and antioxidant, AO) decrease to a value more close to the normal.

Probably that these effects of Humanofort A on steroids metabolism and on oxidative stress are due to the growth factors that this preparation contain. In tab. 3 are presented the results of Humanofort A biotest on human fibroblast. This results show that Humanofort A contain growth factors that are actives on human (fibroblast) cells. Growth factors were shown to regulate steroidogenesis in a paracrine/autocrine manner- IGF-1 and IGF-11 was shown to increase steroids level on human subjects with sexual disorders (14)

Tab.3. Cell growth and cell mortality for ICP-23 human fibroblast cell (passage 23 in vitro) cultivated on medium with foetal calf serum substitute with Humanofort A (chicken embryo peptides).

Experimentals	Cell number (x10 ⁴ cell/cm ²)		Cell mortality (%)	
	72 h	96 h	72 h	96 h
Control (Foetal calf serum 10%)	12.43a	13.25d	4.20g	5.11i
Calf foetal serum 5% + Humanofort A	11.88ab	12.15de	1.81i	2.68n
Calf foetal serum 5%	10.78b	9.73e	3.92h	2.64n
Humanofort A	7.75c	7.75f	1.39i	1.43m

Value followed with the same letter do not differ significantly for P<0.05%

Beside the indirect proof of effects on fibroblast culture, the presence of IGF-1 in Humanofort A was demonstrated by RRA experiment. A content of 32 ng per mg prot was assayed in our chicken embryo preparation (Humanofort A).

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