**Description**

**A COMPOSITION FOR THE TREATMENT OF SPERM PRODUCTION DEFECTS**

**Technical Field**

The invention relates to a composition formed for the use of ginsenoside rg3 and methylprotodioscin in the treatment of the sperm production defects.

**State of the Art**

Today, the cause of the problem may be defined only in a very small proportion of the infertile men. Although some of these causes are curable, it is not possible to correct the defect in the sperm production in some other cases, for example in the problems with genetic origin. In such a case, the only alternative is to provide an effective assistance about having a child, by the use of the existing criteria. In some cases, the problems affecting the sperm production may be corrected by medical or surgical treatment.

Currently employed medical treatments:

1. Hormone treatment (Human chorionic gonadotropin (hCG), gonadotropins (FSH, HMG) or GnRH analogues): The hormone treatment is successful especially in the patients of “hypogonadotropic hypogonadism” who have congenital hormonal deficiencies. Since the deficiency of the testicle-stimulating hormones FSH and LH makes the production of sperm and testosterone in the testicle impossible, this deficiency is eliminated by the externally administered hormones such as hCG, HMG, FSH.

2. Clomiphene citrate: By means of this drug, the effect is realized on the hypothalamus level to stimulate the hormonal system. Thus, the testicles are expected to increase the production of testosterone and sperm.

3. Antioxidants (vitamin E and vitamin C): The main goal of using these vitamins is to eliminate the damage caused by the reactive oxygen radicals.
4. Carnitine: Carnitine is a chemical substance that is available at a high concentration in epididymis under normal conditions. The studies made recently suggest that the addition of carnitine to the diet improves the sperm motility. Although the studies on this subject are yet very limited, they carry the prospects for the future.

The invention no. TR2011/05399 entitled "Use of 3,7-bis(2-hydroxyethyl) icaritin component for the treatment of erectile dysfunction and the defects in the sperm production”, also owned by the inventor, relates to the use of 3,7-bis(2-hydroxyethyl)icaritin, a structurally altered analogue of the flavonoid icaritin, for the treatment of sex disorders and the erectile dysfunction and sperm production defects.

The invention no. EP1811988B1 entitled "Use of acetyl l-carnitine in combination with propionyl l-carnitine and sildenafil for the treatment of erectile dysfunction" is described for the preparation of a medicament and/or dietetic product for the treatment of erectile dysfunction secondary to all those conditions in which there is distress or iatrogenic damage of the lesser pelvis within which the neurovascular bundles of the penis run.

The invention no. EP1492521B1 entitled “Combined use of l-carnitine, acetyl l-carnitine and propionyl l-carnitine for the treatment of oligoasthenoteratospermia" describes the use of L-carnitine, acetyl L-carnitine and propionyl L-carnitine, or of one of their pharmaceutically acceptable salts for the preparation of a medicine for the treatment of oligoasthenoteratospermia of any origin.

Also, the invention no. EP1786812B1 entitled "Pyridine methylene azolidinones and their use as phosphoinositide inhibitors" relates to the use of pyridine methylene azolidinone derivatives of Formula (I) for the treatment and/or prophylaxis of autoimmune disorders and/or inflammatory diseases, cardiovascular diseases, neurodegenerative diseases, bacterial or viral infections, allergy, asthma, pancreatitis, multi-organ failure, kidney diseases, platelet aggregation, cancer, sperm motility, graft rejection or lung injuries. Specifically, the present invention relates to pyridine methylene azolidinone derivatives for the modulation, notably the inhibition of the activity or function of the phosphoinositide-3-kinases, PI3Ks.

As a result, the presence of the need for a composition formed for the use of ginsenoside rg3 and methylprotodioscin in the treatment of the sperm production defects and the inadequacy of the existing solutions have made it necessary to perform an improvement in the relevant art.

**Object of the Invention**

In order to eliminate the disadvantages of the state of the art, an object of the invention is to support spermatogenesis.

Another object of the invention is to support the blood circulation via cardiovascular effects and provide healthy blood circulation in the testicles.

Another object of the invention is to increase the expression of 5-alpha-reductase.

Another object of the invention is to increase the production of DHt.

Another object of the invention is to support the release of sperm from sertoli cells.

Another object of the invention is to simultaneously protect the structure of the leydig cells and support the testosterone production in an alternative manner.

In order to achieve the aforesaid advantages, the invention is a composition formed for use in the treatment of the sperm production defects, said composition being obtained by the components selected from the group comprising 20-(s) ginsenoside rg3 and methylprotodioscin that are used individually or in combinations.

The structural and characteristic features and all the advantages of the invention will become more clearly understood from the detailed description provided below and therefore, the evaluation must be made taking this detailed description into consideration.

**Detailed Description of the Invention**

The invention is a composition formed for the use of ginsenoside rg3 and methylprotodioscin in the treatment of the sperm production defects.

Ginsenoside rg3, an ingredient of the invention, has partial anti-estrogenic action. Accordingly, it supports spermatogenesis. Ginsenoside rg3 supports the blood circulation via its cardiovascular effects and provides healthy blood circulation in the testicles.

Methylprotodioscin, another ingredient of the invention, structurally resembles DHEA; therefore it increases the expression of 5-alpha-reductase and increases the production of DHt. Accordingly, it supports the release of sperm from sertoli cells. Methylprotodioscin simultaneously protects the structure of the leydig cells and supports the testosterone production in an alternative manner. The testosterone produced will interact with 5-alpha-reductase, which is also increased by methylprotodioscin, and will convert to DHT and trigger spermatogenesis.

The composition according to the invention contains 20-(s) ginsenoside rg3, methylprotodioscin.

Said formulation is obtained by a mixture of the aforesaid components according to the following ratios by weight:

30-70% 20-(s) ginsenoside rg3,

70-30% methylprotodioscin.

The composition is obtained from the aforesaid components selected from the aforesaid group and used according to the mentioned weight ratio ranges individually or in combinations.

Said invention also encompasses the use of said composition of ginsenoside rg3 and methylprotodioscin for the treatment of the sperm production defects and the manufacture thereof for this purpose.

**CLAIMS**

1. A composition for the treatment of the sperm production defects, said composition being obtained by the components selected from the group comprising 20-(s) ginsenoside rg3 and methylprotodioscin that are used individually or in combinations.
2. A composition according to Claim 1 characterized in that it comprises 30-70% by weight 20-(s) ginsenoside rg3.
3. A composition according to Claim 1 characterized in that it comprises 70-30% by weight methylprotodioscin.
4. Use of the components according to Claims 1 to 3 obtained individually or in combinations from lactoferrin and apolactoferrin for the manufacture of a composition for the treatment of the sperm production defects.

**ABSTRACT**

**A COMPOSITION FOR THE TREATMENT OF SPERM PRODUCTION DEFECTS**

The invention relates to a composition formed for the treatment of the sperm production defects.

No figure.