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# **An Antiviral Formulation with RNA Dependent RNA Polymerase & DNA Gyrase Suppressive Properties for the Treatment of Coronaviral and Adenoviral Infections**

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## **Description**

### **A COMPOSITION FOR ANTIVIRAL USE**

#### **Technical Field**

The invention relates to a composition for antiviral use.

#### **State of the Art**

Antiviral agents are the pharmacological agents used against the virus infections. They are used in order to control or destroy the viral infection.

Currently existing antiviral therapies are the methods for temporarily suppressing the symptoms caused by the virus, rather than the virus itself, by way of suppression of the enzymes that regulate the capabilities of the viruses to self-replicate and to synthesize DNA from RNA. These components may not provide a permanent solution and they also become ineffective due to the tolerance developed by the virus to these agents in the medium term.

The invention no. EP19990203128 entitled “Antiviral compositions” relates to the pharmaceutical compositions of the antiviral compounds that may be administered to a mammal, particularly to a human with viral infection. These compositions include the particles, which may be obtained by melt-extruding a mixture containing one or more antiviral compound and one or more suitable water-soluble polymer and then milling said melt-extruded mixture.

As a result, the presence of the need for a composition for antiviral use 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 cause permanent destruction in the structure and the function of the virus itself, owing to the tissue-selective increase in the production of nitric oxide (particularly in the tissues exposed to viral infection).

Another object of the invention is to effectively inhibit the DNA synthesis capability of the viruses and also the ability of the viruses to transfer the DNA they synthesize into the healthy cells that they have not yet invaded.

Another object of the invention is to support intracellular immunity by enhancing the TH1 immune reaction.

In order to achieve the aforesaid advantages, the invention is a composition for antiviral use, said composition being obtained by the components selected from the group comprising 1-protopanaxatriol, methylpanaxadiol, methylprotobioside 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 for antiviral use. Of the ingredients of the invention, 1-protopanaxatriol and methylpanaxadiol are the glucopyranoside analogues contained in trace amounts by the plants belonging to the family ginseng. These two active ingredients have effective pro-apoptotic and anti-mutagenic action.

Dimethylprotobioside, another ingredient of the invention, is a derivative of protodioscin, a furastanol saponin derivative naturally contained by the plant dioscorea, and it is contained in trace amounts by the same plant species. Having effective anti-carcinogenic properties, this ingredient is an effective anti-mitotic agent and is effective particularly against solid tumor formation.

When 1-protopanaxatriol, methylpanaxadiol and methylprotobioside, the ingredients of the invention, are simultaneously used, they may cause permanent destruction in the structure and the function of the virus itself, owing to the tissue-selective increase they jointly provide in the production of nitric oxide (particularly in the tissues exposed to viral infection).

Said ingredients, 1-protopanaxatriol, methylpanaxadiol and methylprotobioside, are effective DNA polymerase, integrase and reverse transcriptase suppressors. Suppression of these three critical enzymes in a simultaneous and effective manner effectively inhibits the DNA synthesis capability of the viruses and also the ability of the viruses to transfer the DNA they synthesize into the healthy cells that they have not yet invaded. These three ingredients of the composition according to the invention support intracellular immunity by enhancing the TH1 immune reaction.

The composition according to the invention contains 1-protopanaxatriol, methylpanaxadiol, methylprotobioside. Said formulation is obtained by a mixture of the aforesaid components according to the following ratios by weight:

20-32% 1-protopanaxatriol,

30-47% methylpanaxadiol,

50-21% methylprotobioside.

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 for antiviral purpose and the manufacture thereof for this purpose.

## **CLAIMS**

1. A composition for antiviral use, said composition being obtained by the components selected from the group comprising 1-protopanaxatriol, methylpanaxadiol, methylprotobioside that are used individually or in combinations.
2. A composition according to Claim 1 characterized in that it comprises 20-32% by weight 1-protopanaxatriol.
3. A composition according to Claim 1 characterized in that it comprises 30-47% by weight methylpanaxadiol.
4. A composition according to Claim 1 characterized in that it comprises 50-21% by weight methylprotobioside.
5. Use of the components according to Claims 1 to 4 obtained individually or in combinations from the group consisting of 1-protopanaxatriol, methylpanaxadiol, methylprotobioside for the manufacture of an antiviral composition.