**Description**

**A HYPOTHERMIC COMPOSITION**

**Technical Field**

The invention relates to a hypothermic composition formed for reducing the fever.

**State of the Art**

Hypothermia is a condition in which the normal body temperature of 37°C drops below 35°C. In general, it is triggered by such conditions as exposure to rain, wind, snow or cold water. The human body performs heat exchange with its environment and is influenced by this exchange according to the temperature of the environment. In case the environment is hot, the body heats up, whereas it becomes cool if the environment is cold. For example, when a human bathes naked in the cold water, the body quickly gives heat to the water and thus the body losses heat. When the heat loss starts in a human, the standard heat level of the body drops. Loss of consciousness occurs at 32-35°C and the death occurs in cases of drop below this range.

According to current practice, the following are applied to an individual exposed to hypothermia: The patient may be administered a liquid at room temperature, but since this is a hypothermic condition, a liquid at a temperature of 40-45°C must be preferred. The liquids not containing blood and dextrose may be heated in a microwave device. Dextrose-containing saline solutions must be preferred and ringer’s lactate must not be used. The reason is that lactate is not metabolized in case of hypothermia. Gastric, peritoneal and bladder irrigation or lavement may be performed with liquids at 45°C. Water bath at 40°C is a good method provided that the water temperature is frequently controlled. However, the cardiac monitoring and the i.v. treatment of the patient are quite difficult with this method. It is also possible to warm the blood by way of hemodialysis. Pleural lavage via thoracostomy is another method possible to be performed. The warmed air may be provided by means of a mask. CPR must not be applied to the individuals with taken pulse, no matter how low the heart rate is. The pulse check for severely hypothermic patients must be for at least 3 minutes and the resuscitation in these patients must be continued until the body temperature exceeds 32°C. Lidocaine is ineffective in the ventricular dysrhythmias developing in the hypothermic patients. Some studies have mentioned the possibility to use bretylium in the treatment and prophylaxis of such patients. In case ventricular fibrillation develops despite the administration of 5 mg/kg bretylium for prophylactic purpose, the administration may be repeated at 10 mg/kg.

In addition, the antipyretic drugs currently used achieve their function by suppressing the synthesis of prostaglandin in hypothalamus. Antipyretics (drugs reducing fever) are the medicaments that reduce the body temperature in conditions involving fever. On the other hand, they do not exhibit any effect on the body temperature in case taken by an individual having no fever. Most of the antipyretics may be used also for other purposes. For example, Aspirin, one of the most widely used antipyretics, is also used as a painkiller. Antipyretic drugs reduce the body temperature by increasing the heat loss in the body. However, this method has some transient side effects such as the likely blood sugar fluctuations, sexual desire and function disorders and appetite imbalances.

The body temperature is regulated by the thermoregulator center in the front part of the midbrain. This center serves the function of a thermostat to achieve a balance between the heat generation and the heat loss in the body. Antipyretics enable the hypothalamus to remain insensitive to the increase in the heat induced by interleukin, accordingly the body begins to work in order to reduce the heat and as a result the fever of the individual is reduced. Some antipyretics also influence the factor that causes the fever. Since the fever is actually a response of the immune system to the infection, the use of antipyretics remains controversial.

[Anilin](http://tr.wikipedia.org/wiki/Anilin)e derivatives (ph[enacetin](http://tr.wikipedia.org/wiki/Fenasetin)e): Aniline, although exhibiting antipyretic action, is highly toxic. It irreversibly oxidizes the hemoglobin in the organism to cause intoxication. In order to benefit from the antipyretic effects of aniline, its derivatives have been produced with lower toxic effects. Pyrazole derivatives (antipyrine) are also used.

As a result, the presence of the need for a hypothermic composition for reducing the fever 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 provide hypothermic effect by means of 5-HT2A and 5-HT1A synchronous serotonergic receptor agonism, which is a more effective and side effect-free means of inducing hypothermia.

Another object of the invention is to provide a half life that is 4-5.5 hours longer.

Another object of the invention is to enable a bioabsorption ratio varying in the range 70-80%.

Another object of the invention is to suppress the level of 5-hydroxytriptamine by 4-0-methylmagnolol to induce hypothermia.

Another object of the invention is to provide antagonists that are quite cheaper and easier to provide than the active ingredients that induce hypothermia by suppressing the synthesis of prostaglandin and that have side effects.

In order to achieve the aforesaid advantages, the invention is a hypothermic composition for reducing the fever, said composition being obtained by the components selected from the group comprising 4-methoxypuerarin, 4-o-methylmagnolol, 2-hydroxy-daidzein, 4-methoxymagnolol 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 hypothermic composition formed for reducing the fever. Puerarin, an isoflavone derivative naturally contained by the family pueraria, is used in order to obtain the hypothermic composition according to the invention.

4-methoxypuerarin, a puerarin derivative, achieves this function by way of 5-HT2A and 5-HT1A synchronous serotonergic receptor agonism, which is a more effective and side effect-free means of inducing hypothermia than the suppression of the synthesis of prostaglandin. It differs from puerarin by a half life that is 4-5.5 hours longer and by a bioabsorption ratio varying in the range of 70-80%.

4-0-methylmagnolol, which is a derivative, available at trace amount, of magnolol, a phenolic component naturally contained by the magnolia flower, suppresses the level of 5-hydroxytriptamine to induce hypothermia.

The antagonists required by both active ingredients in order to reverse the effects in case of excessive hypothermia or overdose are quite cheaper and easier to provide components than the currently used active ingredients that induce hypothermia by suppressing the synthesis of prostaglandin and that have side effects.

The composition according to the invention contains 4-methoxypuerarin, 4-o-methylmagnolol, 2-hydroxy-daidzein, 4-methoxymagnolol.

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

5-30% 4-methoxypuerarin

30-5% 4-o-methylmagnolol

60-25% 2-hydroxy-daidzein

5-40% 4-methoxymagnolol

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 hypothermic composition for reducing the fever and the manufacture thereof for this purpose.

**CLAIMS**

1. A hypothermic composition for reducing the fever, said composition being obtained by the components selected from the group comprising 4-methoxypuerarin, 4-o-methylmagnolol, 2-hydroxy-daidzein, 4-methoxymagnolol that are used individually or in combinations.
2. A composition according to Claim 1 characterized in that it comprises 5-30% by weight 4-methoxypuerarin.
3. A composition according to Claim 1 characterized in that it comprises 30-5% by weight 4-o-methylmagnolol.
4. A composition according to Claim 1 characterized in that it comprises 60-25% by weight 2-hydroxy-daidzein.
5. A composition according to Claim 1 characterized in that it comprises 5-40% by weight 4-methoxymagnolol.
6. Use of the components according to Claims 1 to 5 obtained individually or in combinations from the group consisting of 4-methoxypuerarin, 4-o-methylmagnolol, 2-hydroxy-daidzein, 4-methoxymagnolol for the manufacture of a hypothermic composition for reducing the fever.

**ABSTRACT**

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The invention relates to a hypothermic composition formed for reducing the fever.

No figure.