**Description**

**A FORMULATION INTENDED FOR TREATMENT OF CHOLERA**

**Field of Invention**

The present invention herewith is related to a composition developed for treatment of cholera.

**Background of the Related Technology**

Cholera is a disease that causes acute and severe diarrhea, which at present known to be caused by a bacteria called Vibrio Cholerae.

Based on the information related to the technology people suffering from cholera can be treated in a very short time by a treatment called “o” (oral fluid treatment). In this treatment patients are given a type of salt and glucose mixture at a composition that is equivalent to the normal fluid-electrolyte balance of the body (isotonic) to compensate for the water and electrolyte loss (sodium, potassium, chlorine, bicarbonate) of the body and to provide energy to the patient who cannot get normal nutrients the body needs. On the other hand, for patients in severe conditions, who cannot drink anything (about 10-20% of all the patients) the mixture is administered intravenously. If the patient is in a very serious condition or it is an emergency case, then antibacterial treatment is applied using antibiotics like tetracycline.

With the existing technology it is possible to destroy the Vibrio Cholerae bacilli within 48 hours, with an antibacterial medicine administered orally at early stage and to reduce the volume of feces by 50% and to stop diarrhea. The type of medicine to be used is determined by examining samples of feces of patients suffering from the disease and detecting the antibacterial medicine to which the isolated V. cholera strain is sensitive to. While vaccines against cholera exists and are used in certain countries (Dukoral, Mutacol etc.), it cannot be declared that these vaccines help develop strong immunity against the disease. While these vaccines help develop better immunity when compared to the cholera vaccines in the past and have less side effects, these vaccines still have not reached the ideal level and thus are not used in many countries. Research is still ongoing in the quest for development of an ideal cholera vaccine.

The invention presented herewith with no “EP2076271B1", with title "Inhibition of Cholera Toxins by Galactooligosaccharides (gos)” and under classification number “A61K 31/702", is related to nutrients and pharmaceutic compositions containing indigestible galactooligosaccharides (GOS). It is particularly related to using GOS derivatives in prevention and treatment of diseases caused by bacterial toxins. The present invention herewith is related to GOS with a polymerization degree of or higher and preferably is 6 or higher, being stuck and/or adhered to a cholera toxin family member or is related to presenting the use of GOS derivatives for manufacturing a nutritional or pharmaceutical composition for treatment or prevention of an acute or chronic disease. On the other hand, also a method for obtaining a GOS fraction that can inhibit the binding of the cholera toxin (Ctx) to GMI as well as fractions that can be produced using such methods are presented.

Again the invention presented herewith with no “WO 2000/037106", with title "Oral Vaccine Against Diarrhea” and under classification number “A61K 39/108", is related to description of an oral vaccine against diarrhea caused by enterotoxigenic E. coli in humans. The vaccine consist of an agent that consists of for example PBS and a defined quantity, like for example 0.5-2.0 mg of cholera toxin B sub-unit (CTB), from a defined quantity, like for example 100 to 300 g of each type of antigen with three different types of colonization factor, selected from a group consisting of CFA I, CFA II, (CS1, CS2 and CS3) and CFA IV (CS4, CS5 and CS6) over the killed E.Coli bacterial that do not have the gene encoding temperature variant enterotoxin (LT) and this vaccine composition is freed from enterotoxins stable in heat (ST).

To conclude it has become inevitable to proceed with a development in the area of the related technology, considering the inadequacy of the existing solutions and the need for a composition intended for treatment of cholera.

**Objective of the Invention**

To overcome the disadvantages referred in the Background of the Related Technology,

* One objective of the present invention is for it to display topoisomerase type 1 suppressing character;
* One other objective of the invention is for it to display dna polymerase suppressing character;
* One other objective of the invention is for it to display topoisomerase type 2 suppressing character;
* One other objective of the invention is for it to display ribonucleotide reductase suppressing character.

The present invention which is aimed to achieve the above-mentioned advantages, is a combination intended for treatment of cholera and is a composition that is obtained by combination of the compositions selected in a single form or in combinations from a group containing; 3,7-bis(2-hydroxymethyl)-8-(3-methyl-2-butene-1-yl)-4H-1-benzopyran-4-one, 3,5-bis(2-hydroxytriethyl)-8-(3-methyl-2-butene-1-yl)-4H-1-benzopyran-4-one, 2-(4-hydroxy-3-prop-2-hexa enylphenyl)-4-prop-2-enyl phenol, 2,7-bis(4-heksahydroxy-3-prop-2-enyl-phenyl)- 4-prop-2-methoxyphenol.

Structural and characteristic properties as well as all the advantages of the invention presented herewith will be clearly understood with the detailed description provided below and thus the evaluation regarding the present invention should be based on the detailed description presented herewith.

**Detailed Description of the Invention**

The present invention is related to a composition developed for treatment of cholera. The referred formulation, displays topoisomerase type 1 suppressing character, displays dna polymerase suppressing character, displays topoisomerase type 2 suppressing character, displays ribonucleotide reductase suppressing character.

The composition of the invention presented herewith contains; 3,7-bis(2-hydroxymethyl)-8-(3-methyl-2-butene-1-yl)-4H-1-benzopyran-4-one, 3,5-bis(2-hydroxytriethyl)-8-(3-methyl-2-butene-1-yl)-4H-1-benzopyran-4-one, 2-(4-hydroxy-3-prop-2-hexa enylphenyl)-4-prop-2-enyl phenol, 2,7-bis(4-heksahydroxy-3-prop-2-enyl-phenyl)- 4-prop-2-methoxyphenol.

The referred formulation is formed by mixing the above-mentioned components at below percentages by weight;

* 11-20% of 3,7-bis(2-hydroxymethyl)-8-(3-methyl-2-butene-1-yl)-4H-1-benzopyran-4-one,
* 29-10% of 3,5-bis(2-hydroxytriethyl)-8-(3-methyl-2-butene-1-yl)-4H-1-benzopyran-4-one,
* 20-60% of 2-(4-hydroxy-3-prop-2-hexa enylphenyl)-4-prop-2-enyl phenol,
* 40-10% of 2,7-bis(4-heksahydroxy-3-prop-2-enyl-phenyl)- 4-prop-2-methoxyphenol.

Components given above are obtained by combining the components from the above-mentioned group at the given range of weight ratios in a single form or in combinations thereof.

The present invention at the same time is related to using the above-referred composition for treatment of cholera and manufacturing it for such purpose

**CLAIMS**

1. A composition intended for treatment of cholera, which consists of combining the components selected from the group 3,7-bis(2-hydroxymethyl)-8-(3-methyl-2-butene-1-yl)-4H-1-benzopyran-4-one, 3,5-bis(2-hydroxytriethyl)-8-(3-methyl-2-butene-1-yl)-4H-1-benzopyran-4-one, 2-(4-hydroxy-3-prop-2-hexa enylphenyl)-4-prop-2-enyl phenol, 2,7-bis(4-heksahydroxy-3-prop-2-enyl-phenyl)- 4-prop-2-methoxyphenol in a single form or in combinations thereof.
2. The composition of Claim 1 which is characterized by containing 11-20% of 3,7-bis(2-hydroxymethyl)-8-(3-methyl-2-butene-1-yl)-4H-1-benzopyran-4-one by weight.
3. The composition of Claim 1 which is characterized by containing 29-10% of 3,5-bis(2-hydroxytriethyl)-8-(3-methyl-2-butene-1-yl)-4H-1-benzopyran-4-one by weight.
4. The composition of Claim 1 which is characterized by containing 20-60% of 2-(4-hydroxy-3-prop-2-hexa enylphenyl)-4-prop-2-enyl phenol by weight.
5. The composition of Claim 1 which is characterized by containing 40-10% of 2,7-bis(4-heksahydroxy-3-prop-2-enyl-phenyl)- 4-prop-2-methoxyphenol by weight.
6. Using the compositions obtained by selecting singly or in combination of components from the group of; 3,7-bis(2-hydroxymethyl)-8-(3-methyl-2-butene-1-yl)-4H-1-benzopyran-4-one, 3,5-bis(2-hydroxytriethyl)-8-(3-methyl-2-butene-1-yl)-4H-1-benzopyran-4-one, 2-(4-hydroxy-3-prop-2-hexa enylphenyl)-4-prop-2-enyl phenol, 2,7-bis(4-heksahydroxy-3-prop-2-enyl-phenyl)- 4-prop-2-methoxyphenol from any one as given in Claims 2-5 in manufacturing the formulation intended for treatment of cholera.

**SUMMARY**

**A FORMULATION INTENDED FOR TREATMENT OF CHOLERA**

The present invention is related to a composition developed for treatment of cholera. The referred formulation, displays topoisomerase type 1 suppressing character, displays dna polymerase suppressing character, displays topoisomerase type 2 suppressing character, displays ribonucleotide reductase suppressing character.

There are no illustrations.