HIGH MOLECULAR WEIGHT POLYMERIC COMPOSITION AND A NEW USAGE OF THE HIGH-MOLECULAR WEIGHT POLYMERIC COMPOSITION

FIELD OF THE INVENTION

Embodiments of the present invention relate to a high molecular weight polymeric composition and a new usage of the high-molecular weight polymeric composition, especially toward a high-molecular weight polymeric composition has capability to indirectly adsorb and remove body fluid, liquid or solution ingested from food, or harmful or toxic substances existed in food and a new usage of the high molecular weight polymeric composition.

BACKGROUND

A conventional high molecular weight polymer includes a natural polymeric composition, such as an animal source of a collagen, a gelatin, a hyaluronic acid, a chitin, a chitosan or a derivative of above mention composition or a plant source of an alginates, a cellulose or a derivative of above mention composition, has excellent biocompatibility and bio-degradability, is divided into small molecules in an organism, and is removed out of the body through a kidney filtering and metabolizing.

Those high molecular weight polymers and relative compositions might be used as a food additive due to well swelling property to increase full sense, decrease dietary requirement and achieve the purpose of sliming down the weight. Moreover, the high molecular weight polymers and relative compositions comprise a lot of fiber to improve the movement of the gastrointestinal tract to be a major gradient of a stool softener (i.e. Sterculia BP or Frangula BPC) and promote the defecation of a constipated patient.

However, above mentioned applications of the high molecular weight polymers and relative compositions are focused on the water ~~adsrobability~~ adsorbability of the high molecular weight polymers and relative compositions, ignore other developing potential and lower the actually industrial value.

SOME EXEMPLARY EMBODIMENTS

These and other needs are addressed by the invention, wherein approaches are provided for a high molecular weight polymeric composition and a new usage of the high-molecular weight polymeric composition.

According to one aspect of an embodiment of the invention, the new usage of a high-molecular weight polymeric composition being adsorbed a toxin or a ~~stimulating~~ harmful substance existed in a solution that is intaked into the body and removing the toxin or the ~~stimulating~~ harmful substance out of the body to prevent the body from being damaged by the toxin or the ~~stimulating~~ harmful substance.

According to another aspect of an embodiment of the invention, the high-molecular weight polymeric composition comprises a high-molecular weight polymer, and a biocompatibility excipient combined with the high-molecular weight polymer. The high-molecular weight polymer has capability to adsorb a toxin or a ~~stimulating~~ harmful substance existed in a solution that is intaked into the body and removed the toxin or the ~~stimulating~~ harmful substance out of the body to prevent the body from being damaged by the toxin or the ~~stimulating~~ harmful substance.

Accordingly, the high-molecular weight polymeric composition is able to be applied to control weight by lowering the food digestibility or avoid damage by decreasing the toxin or ~~stimulating~~ harmful substance released into the body. The high molecular weight polymeric composition has well biocompatibility to be widely applied in human.

In another aspect the present invention provides the use of a composition in the manufacture of a medicament for the absorption of a toxin or a harmful substance in a liquid or solution intaked into an organism, wherein the composition comprises a high molecular weight polymeric core comprising a high molecular weight polymer wherein the high molecular weight polymer is Sterculia BP, Frangula BPC, or chitin, a shell disposed outside of the high molecular weight polymeric core comprising a biocompatible excipient and wherein the high molecular

weight polymer is present in the medicament in an amount sufficient to convert the intaked liquid or solution to a semi-solid to solid colloid.

In a further aspect the present invention provides a composition comprising a high-molecular weight polymeric core and a shell disposed outside of the high molecular weight polymeric core comprising a biocompatible excipient wherein the high molecular weight polymeric core is Sterculia BP, Frangula BPC, or chitin.

In another aspect the present invention provides the use of the composition of the preceding paragraph in the manufacture of a medicament for the adsorption of a toxin or a harmful substance in a liquid or solution intaked into an organism.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is illustrated by way of example, and not by way of limitation, in the figures of the accompanying drawings in which like reference numerals refer to similar elements and in which:

Fig. 1 is a cross- sectional view of a high molecular weight polymeric composition in accordance with the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In the following description, for purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of the embodiment of the invention. It is apparent, however, to one skilled in the art that the present invention may be practiced without these specific details or with an equivalent arrangement. Same element in various embodiments of the present invention may use same numbering in different illustrated figures.

A high molecular weight polymeric composition and a new usage of the high-molecular weight polymeric composition. In the following description, for the purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of the present

invention. It is apparent, however, to one skilled in the art that the invention may be practiced without specific details or with an equivalent arrangement. In other instances, well-known structures and devices are shown in block diagram form in order to avoid unnecessarily obscuring the embodiments of the present invention.

In one embodiment, the new usage of the high-molecular weight polymeric composition adsorbs a body fluid of an organism (i.e. digestion fluid), toxin existed in the organism, or a liquid or a solution containing a ~~stimulating~~ toxin or a harmful substance, thus, the body fluid, the liquid or the solution is directly by inhaled inside the high-molecular weight polymeric composition and the toxic or the harmful substance is indirectly ~~grabed~~ grabbed by the high-molecular weight polymeric composition. Accordingly, fewer body fluid is applied to digest the intaked food to reduce the assimilate efficiency of food, and less toxin or harmful substance in the food or drink directly contact with the digestion organs/tissues to avoid the health damages due to adsorb excess toxin or harmful substance. In this embodiment, the high-molecular weight polymeric composition is applied to adsorb solutions including body fluid, liquids intaked into or existed in the body, therefore, the toxic or harmful substances in the solutions also ~~grabed~~ grabbed by the high-molecular weight polymeric composition and removed out of the body wile defecating. ~~Because the water adsorption is~~

The high-molecular weight polymeric composition is selected from the group consisting of: a high-molecular weight fiber, natural fiber, ~~symthetic~~ synthetic fiber, and high molecular weight absorber. The natural fiber is selected from the group consisting of: Sterculia BP, Frangula BPC, collagen, cellulose, chitin and chitosan. The high-molecular weight polymeric composition has excellent biocompatibility, has a high reticulate structure, and forms ~~mutilple~~ multiple tiny apertures with different sizes. Therefore, the high-molecular weight polymeric composition will not damage the health after being intaked into the body. Further, toxin or ~~stimulating components~~ harmful substances existed in the food or drink will be adsorbed and fixed in the apertures to avoid the toxin or ~~stimulating components~~ harmful substances from contacting with the tissues and generating the damage to the tissues.

Example 1

In this example, a Sterculia BP is selected to adsorb a coffee solution to illustrate the new usage of the high-molecular weight polymeric composition of the present invention. The Sterculia BP is a kind of high molecular fiber, is applied ~~sinlely~~ solely or mixed with another adsorptive material. In this example, The Sterculia BP is mixed with a Frangula BPC by 25% and 75% of percentage weight to from a high molecular weight fiber mixture. One gram of fiber mixture is added into 30 ml espresso coffee to be mixed well and form a fiber-coffee mixture. After 5 minutes, the fiber-coffee mixture is getting stringy. After 10 minutes, the fiber-coffee mixture performances as semi-solid state and is still getting thicken. After 30 minutes, the fiber-coffee mixture is almost solidify and lacks most flow property. In this example, people intaked the fiber mixture before drinking the espresso coffee, the caffeine in the coffee is ~~grabed~~ grabbed by the fiber mixture through the adsorption of espresso coffee. Therefore, most caffeine is isolated with the digestion tissue to efficient reduce the health damage result from the caffeine.

The mix rate of Sterculia BP and Frangula BPC is not limited as 25% and 75%. The Sterculia BP might be applied single or be mixed with any other high molecular weight polymer.

Example 2

A common drink cola is applied in this example to illustrate the new usage of the high-molecular weight polymeric composition of the present invention. The Sterculia BP is mixed with a Frangula BPC by 25% and 75% of percentage weight to from a high molecular weight fiber mixture. One gram of fiber mixture is added into 30 ml cola to be mixed well and form a fiber-cola mixture. After 5 minutes, the fiber-cola mixture is getting stringy. After 10 minutes, more than 95% of cola is adsorbed by the high-molecular weight polymeric composition and the fiber-cola mixture almost lacks the flow property. After 30 minutes, the fiber-cola mixture is solidity. Therefore, the high-molecular weight polymeric composition is able to quickly keep and

adsorb the flow though cola and grab any harmful substance to protect the body from contacting and digesting the harmful substance,

Example 3

This example uses the high-molecular weight polymeric composition same as example to adsorb an alcohol solution to illustrate the new usage of the high-molecular weight polymeric composition of the present invention. One gram high molecular weight polymeric composition is added in 30 ml sorghum wine containing 58% alcohol to form a fiber-wine mixture. The fiber-wine mixture is getting stringy after 5 minutes mixing, performances as a gel after 10 minutes mixing, and becomes a fiber-wine cake after 20~30 minutes mixing. After one hour, the fiber-wine mixture is solidity and loses the flow property. Accordingly, the high-molecular weight polymeric composition of the present invention has capability to adsorb the intaked alcohol and prevent the alcohol directly contacting the tissue and generating health damage.

The high-molecular weight polymeric composition is manufactured as a chew that is intaked before drinking and participating a party or a banquet. The intaked alcohol is immediately grabbed by the high-molecular weight polymeric composition stayed in the gastrointestinal tract to reduce the contacting and digesting amount of the alcohol and decrease the damage degree of the body. Moreover, the high-molecular weight polymeric composition is applied in adsorbing ~~stimulating component~~ harmful substance such as caffeine, drug or tea extract to assist to withdraw the addiction about the caffeine, drug or tea extract. Further, the high-molecular weight polymeric composition of the present invention is able to adsorb acid or alkali and is applied to decrease uncomfortable due to eat strong acid/alkali by mistake or excess secret of stomach fluid.

The high-molecular weight polymeric composition in this embodiment is mixed with a biocompatibility excipient to form a pill, a tablet, a capsule, a micro particle, a emulsion or an injection that are injected, spread, oral administrated or sprayed to the body. With reference to Fig. 1, high-molecular weight polymeric composition of the embodiment is manufactured as a

pill 1 and comprises a high-molecular weight polymeric core 11 and a shell 12. The shell 12 is disposed outside of the high-molecular weight polymeric core 11 and is made of at least one ~~biocompability~~ biocompatibility excipient and comprises multiple holes. The toxin or the ~~stimulating component~~ harmful substance gets into the pill and is fixed between fibers of high-molecular weight polymeric core 11 within the high-molecular weight polymeric core 11 and is blocked to move out from the hole of the shell 12 to contact with the tissues.

Accordingly, the high-molecular weight polymeric composition promptly receives and adsorbs the toxin or ~~stimulating components~~ harmful substances existed in the liquid or solution to avoid the harmful toxin or ~~stimulating components~~ harmful substances from directly contacting to the tissue to reduce the toxicity, damage degree and side affection. The new usage of the high-molecular weight polymeric composition is to directly adsorb the intaked solution or liquid to indirectly garb the harmful substance and toxin existed in the solution or liquid that is removed out of the body with the high-molecular weight polymeric composition. Therefore, the application field of the high-molecular weight polymeric composition is wider to improve the commercial potential.

While the invention has been described in connection with a number of embodiments and implementations, the invention is not so limited but covers various obvious modifications and equivalent arrangements, which fall within the purview of the appended claims. Although features of the invention are expressed in certain combinations among the claims, it is contemplated that these features can be arranged in any combination and order.

WHAT IS CLAIMED IS:

1. ~~A new usage~~ The use of a ~~high-molecular weight polymeric~~ composition in the manufacture of a medicament for the absorption of ~~being adsorbed~~ a toxin or a ~~stimulating substance existed in a solution that is intaked into the body and removing the toxin or the stimulating substance out of the body to prevent the body from being damaged by the toxin or the stimulating substance.~~ harmful substance in a liquid or solution intaked into an organism, wherein the composition comprises:

a high-molecular weight polymeric core comprising a high molecular weight polymer wherein the high molecular weight polymer is Sterculia BP, Frangula BPC, or chitin,

a shell disposed outside of the high molecular weight polymeric core comprising a biocompatible excipient; and wherein

the high molecular weight polymer is present in the medicament in an amount sufficient to convert the intaked liquid or solution to a semi-solid to solid colloid.

~~4.~~ 2.The ~~new usage~~ use of ~~the high-molecular weight polymeric composition as claimed in~~ claim 1, wherein the ~~high-molecular weight polymeric composition~~ medicament is formulated to be administrated by injection , daub, ~~is injected, spread,~~ oral administrated~~,~~ or ~~sprayed~~ spraying.

~~5.~~3. The ~~new usage~~ use of ~~the high-molecular weight polymeric composition as claimed in~~ claim ~~4~~ 1 or claim 2, wherein the ~~high-molecular weight polymeric composition~~ toxin or harmful substance is ~~adsorbs~~ acid, alcohol, caffeine, ~~alkali~~base, theine or uric acid.

4. The use of any one of Claims 1 to 3, wherein 1g of the high molecular weight polymer is used to absorb 30 ml to 50 ml of the liquid or solution.

5. The use of any one of Claims 1 to 4, wherein the colloid formed is removed from the organism by excretion.

~~2.~~ 6. A composition comprising:~~The new usage of the high molecular weight polymeric composition as claimed in claim~~

~~1, wherein the~~ a high-molecular weight polymeric core; and ~~composition comprises a high molecular weight fiber, a natural fiber, a synthesized fiber or a high molecular weight adsorber.~~

~~3. The new usage of the high molecular weight polymeric composition as claimed in claim~~

~~2, wherein the natural fiber is selected from a group consisting of:~~ a shell disposed outside of the high-molecular weight polymeric core comprising a biocompatible excipient;

wherein the high molecular weight polymeric core is Sterculia BP, Frangula BPC~~, collagen, cellulose,~~ or chitin.~~, chitosan and a mixture of the~~

~~6.~~ 7. The use of the ~~A high molecular weight polymeric~~ composition of claim 6 in the manufacture of a medicament for adsorption of a ~~comprising a high molecular weight polymer; and a biocompatibility excipient combined with the high molecular weight polymer; wherein the high molecular weight polymer has capability to adsorb a toxin or a stimulating substance existed in a solution that is intaked into the body and removed the~~ toxin or a harmful substance in a liquid or solution intake inti a organism. ~~the stimulating substance out of the body to prevent the body from being damaged by the toxin or the stimulating substance.~~

~~7. The high molecular weight polymeric composition as claimed in claim 6, wherein the high molecular weight polymer comprises a high molecular weight fiber, a natural fiber, a synthesized fiber or a high molecular weight adsorber.~~

~~8. The new usage of the high-molecular weight polymeric composition as claimed in claim 7, wherein the natural fiber is selected from a group consisting of: Sterculia BP, Frangula BPC, collagen, cellulose, chitin, chitosan and a mixture of the~~

~~9.~~ 8.The ~~new usage~~ use of ~~the high molecular weight polymeric composition as claimed in~~ claim ~~1~~ 7, wherein the ~~high molecular weight polymeric composition~~ medicament is formulated to be administrated by injection ~~injected~~, ~~spread~~ daub, oral administrated, or ~~sprayed~~ spraying.

~~10.~~9.The ~~new usage~~ use of ~~the high-molecular weight polymeric composition as claimed in~~ claim ~~9~~ 7 or claim 8, wherein the ~~high molecular weight polymeric composition adsorbs~~ toxin or harmful substance is acid, alcohol, caffeine, ~~alkali~~ base, theine or uric acid.

10. The se as claimed in Claim 1, substantially as hereinbefore described with particular reference to any one of more of the examples and/or figure 1.

11. A composition as claimed in Claim 6, substantially as hereinbefore described with particular reference to any one or more of the examples and/or figure 1.

12. The use as claimed in Claim 7, substantially as hereinbefore described with particular reference to any one or more of the examples and/or figure 1.

ABSTRACT OF THE DISCLOSURE

HIGH MOLECULAR WEIGHT POLYMERIC COMPOSITION AND A NEW USAGE OF THE HIGH-MOLECULAR WEIGHT POLYMERIC COMPOSITION

Approach is provided for a high molecular weight polymeric composition and a new usage of the high-molecular weight polymeric composition. The new usage of the high-molecular weight polymeric composition directly adsorbs body fluid, or indirectly adsorbs toxin or ~~stimulating~~ harmful substance existed in the intaked solution or liquid and removes the body fluid or the toxin or ~~stimulating~~ harmful substance out of body. Therefore, the high-molecular weight polymeric composition is helpful to reduce the food digestibility or to prevent the toxin or ~~stimulating~~ harmful substance from adsorbing in the gastrointestinal tract, even to bring the toxin or ~~stimulating~~ harmful substance out of the body. Accordingly, the high-molecular weight polymeric composition is able to be applied to control weight by lowering the food digestibility or avoid damage by decreasing the toxin or ~~stimulating~~ harmful substance released into the body. The high molecular weight polymeric composition has well biocompatibility to be widely applied in human.

[Figure accompanying abstract: Fig. 1]