

SKIN COATING

PRIORITY UNDER 35 U.S.C Section 119(e) & 37 C.F.R. Section 1.78

[001] This nonprovisional application claims priority based upon the following prior United States Provisional Patent Application entitled: Super Skin Coating, Application No.: 63/077,501 filed September 11, 2020, in the name of Christina Rahm Cook, which is hereby incorporated by reference for all purposes.

FIELD OF THE INVENTION

[002] The present invention relates generally to skin coatings, more specifically but not by way of limitation, a skin coating that is operable to inhibit matter such as bacteria, viruses, fungus, heavy metal toxins from entering the body of a user and can be incorporated with inflammation-free, gas-permeable, lotions or other materials that can be disposed on the skin that can further integrate with on-skin electronics so as to also interface with remote monitoring devices in order to detect and inform patients and providers of harmful agents entering the skin and as such the body.

BACKGROUND

[003] Human skin is the largest organ of the body, providing key barrier functions preventing such events as water loss and further providing protection from environmental dangers such as but not limited to microbes, particulates, irritants and allergens. Even in its optimal condition skin has limitations as the skin can be comprised by parameters such as but not limited to temperature, pH, conductivity, water resistance, chemicals, flexibility, and durability. Additionally, skin can be compromised due to illness, environmental factors, genetics, disease, accidents, immune disorders. Current technologies and skin treatments do not sufficiently address the monitoring of health of the skin nor do they have the ability to identify the need of the skin and as such the body. Moreover, current technologies are deficient in their ability to deliver pharmaceuticals and nutraceuticals so as to protect the skin and further support healing of the skin and body. Furthermore, most existing skin solutions, are not able to interface with remote computing devices.

[004] Current skin coatings available do not have the ability to monitor health risks and are not able to communicate or to interface with monitoring systems in order to provide data so as to assist in making decisions regarding the potential health risks of a user. Existing nano-fibrous mats have begun to be utilized in place of other artificial dermal-forming techniques and can further be utilized in areas such as but not limited to chemical industries, war field and mines. These coatings can have a remarkable breathability while preserving the maximum protection against chemicals but there is a need for further development as it pertains to these types of coatings, especially as it pertains to the exposure of nuclear waste and resistance to various bacteria and viruses. Additionally, these type of coating cannot be implemented and/or utilized by the average consumer and as such alternatives that accomplish the desired objectives discussed herein need to be developed.

[005] Accordingly, there is a need for a skin coating having one embodiment of a lotion that is operable to provide protection and healing of the skin and further provide resistance to bacteria, fungus, parasites, toxins, nuclear waste.

SUMMARY OF THE INVENTION

[006] It is the object of the present invention to provide a skin coating that is operable to inhibit penetration of toxins into the skin of a user wherein the structure of the present invention incorporates a formula using stabilized ionic silver, citric acid and nano-sized zeolite solutions in combination with the structure of iron oxide nanoparticles.

[007] Another object of the present invention is to provide a skin coating configured to be superposed a user's skin and inhibit matter from penetrating the skin wherein in an alternative embodiment of the present invention the structure of the coating of the present invention uses lipid vesicles composed of one or multiple lipid bilayers to ensure permeability.

[008] A further object of the present invention is to provide a skin coating that is operable to inhibit penetration of toxins into the skin of a user wherein the formula of the present invention employs in a preferred embodiment a lotion formula that is inflammation free and gas-permeable.

[009] Still another object of the present invention is to provide a skin coating configured to be superposed a user's skin and inhibit matter from penetrating the skin wherein an alternative embodiment of the present invention incorporates pressure sensitive adhesives into the structure thereof so as to assure sufficient cohesive properties at the required thickness of the skin.

[0010] An additional object of the present invention is to provide a skin coating that is operable to inhibit penetration of toxins into the skin of a user wherein the present invention incorporates a modified nano-particulate

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] A more complete understanding of the present invention may be had by reference to the following Detailed Description and appended claims when taken in conjunction with the accompanying Drawings wherein:

[0017] Figure 1 is an exploded microscopic view an embodiment of the present invention.

DETAILED DESCRIPTION

[0018] Referring now to the drawings submitted herewith, wherein various elements depicted therein are not necessarily drawn to scale and wherein through the views and figures like elements are referenced with identical reference numerals, there is illustrated a skin coating 100 constructed according to the principles of the present invention.

[0019] An embodiment of the present invention is discussed herein with reference to the figures submitted herewith. Those skilled in the art will understand that the detailed description herein with respect to these figures is for explanatory purposes and that it is contemplated within the scope of the present invention that alternative embodiments are plausible. By way of example but not by way of limitation, those having skill in the art in light of the present teachings of the present invention will recognize a plurality of alternate and suitable approaches dependent upon the needs of the particular application to implement the functionality of any given detail described herein, beyond that of the particular implementation choices in the embodiment described herein. Various modifications and embodiments are within the scope of the present invention.

[0020] It is to be further understood that the present invention is not limited to the particular methodology, materials, uses and applications described herein, as these may vary. Furthermore, it is also to be understood that the terminology used herein is used for the purpose of describing particular embodiments only, and is not intended to limit the scope of the present invention. It must be noted that as used herein and in the claims, the singular forms "a", "an" and "the" include the plural reference unless the context clearly dictates otherwise. Thus, for example, a reference to "an element" is a reference to one or more elements and includes equivalents thereof known to those skilled in the art. All conjunctions used are to be understood in the most inclusive sense possible. Thus, the word "or" should be understood as having the definition of a logical "or" rather than that of a logical "exclusive

or” unless the context clearly necessitates otherwise. Structures described herein are to be understood also to refer to functional equivalents of such structures. Language that may be construed to express approximation should be so understood unless the context clearly dictates otherwise.

[0021] References to “one embodiment”, “an embodiment”, “exemplary embodiments”, and the like may indicate that the embodiment(s) of the invention so described may include a particular feature, structure or characteristic, but not every embodiment necessarily includes the particular feature, structure or characteristic.

[0022] Referring in particular to the Figures submitted as a part hereof, the skin coating 100 functions to provide a user with healing of the skin and further provide resistance to materials such as but not limited to bacteria, fungus and viruses. The present invention includes two preferred embodiments wherein one embodiment is a lotion formula that is applied to the skin of a user. The alternative embodiment is a stretchable nano-mesh structure utilizing a base of unilaminar membranes that include but are not limited to hydrogels, hydrocolloidal dressings, and vapor permeable membranes that are configured to be superposed areas of the skin that are exposed when a user is disposed in an outdoor environment. As the skin provides the largest interface between the human body and the external environment, one of the skin’s positive characteristics is the ability to regulate what enters the body via the skin, as well as what is excreted therefrom. The embodiments of the present invention are made with a low molecular weight so as to ensure stability and permeability of the skin coating so as to permit desired excretion yet inhibit undesired materials from entering through the skin. The coating embodiments of the present invention further utilize a nano-particulate delivery system. The embodiments of the present invention utilize a hydrolyzed zeolite and silver ion formula that are disposed in the base of each embodiment. The present invention further incorporates solid lipid nanoparticles, nanostructured lipid carriers, polymer-based nanoparticles and magnetic nanoparticles for both

embodiments of the present invention so that the skin demonstrates safe and efficacious dermal tissue permeability. As the lipid vesicles are composed of mixtures of phosphatidylcholines with hydrocarbon chains this ensures permeability.

[0023] The proposed skin coating 100 of the present invention is a type of coating that can identify and attach to negative outside factors and has the ability to inhibit their penetration into the skin. The lotion embodiment of the present invention incorporates nano-emulsions of zeolites and/or sodium aluminosilicates, as well as various forms of HOCL formulations in combination with vitamins, minerals, and oils. The lotion embodiment of the present invention is manufactured from a blend of peptides, squalane, sodium hyaluronate, cannabis derivatives and zeolites. The base of the lotion embodiment of the present invention is a water glycerin mixture wherein the base comprises anywhere from thirty to seventy percent of the total formula. Alternate components and ranges are as follows: essential vitamins such as but not limited to vitamin E, ten to twenty percent; ten to twenty percent amino acids; ten to twenty percent minerals such as but not limited to zinc and copper; ten to twenty percent silver ions with citric acid catalyst and ten to twenty percent zeolites and/or sodium aluminosilicates. The lotion embodiment of the present invention further employs nano-carriers manufactured from liposomes that are present therein. The liposomes are introduced into the lotion embodiment of the present invention through processes such as but not limited to emulsification. The liposomes present in the lotion embodiment of the present invention are carriers that provide enhanced delivery and availability of the components of the present invention such as the zeolites.

[0024] As is known in the art, aqueous solutions have hydrogen bonds that are bonds between water molecules resulting in a tetrahedral structure which gives rise to large energetic changes resulting in the most stable and favorable energy state. This is useful as a driving force behind self-assembly because when hydrophobic molecules are dispensed in water, water

molecules around the introduced materials have fewer neighboring water molecules available to form hydrogen bonds giving a result of fewer molecules of similar potential energy available for binding, which corresponds to a decrease in entropy. The aforementioned minimizes the interface area between water molecules and hydrophobic molecules would maximize the number of available micro-state interaction with molecules of the same potential energy which is a driving force for self-assembly that is an integral part of both embodiments of this present invention.

[0025] In the alternative embodiment of the present invention, the structure of the skin coating 100 incorporates a formula using stabilized ionic silver, citric acid and nano-sized zeolite solutions in combination with the structure of iron oxide nanoparticles coated with polymers that help stabilize and maintain the nanoparticles in the skin in a dispersed state, making this type of skin coating an ideal non-toxic tool for treating infections. The structure of the skin coating 100 further utilizes lipid vesicles mainly composed of one or multiple lipid bilayers composed of mixtures of phosphatidylcholines with hydrocarbon chains employed in the formula to ensure permeability. Additionally, this addresses possible barrier issues of delivery of the solution that is held within the skin coating 100. This is used in conjunction with using a conductive nano-mesh structure that is inflammation free, gas-permeable, ultrathin and stretchable and is applied to human skin, or a portion thereof exposed due to lack of clothing to produce the skin coating 100. In this alternative embodiment, the formula for the skin coating 100 incorporates pressure sensitive adhesives into the structure. Pressure sensitive adhesives are physically and chemically compatible with drugs and other excipients and/or additives and to ensure sufficient cohesive properties at the required thickness of the skin coating 100. Furthermore, by incorporating a modified nano-particulate delivery system into the formula, as well as, silver, nickel, or gold particles as a nano-surface, the skin coating 100 impacts the material conductivity energizing the electrical field of the

skin allowing for the current to flow so as to enable conduction through the skin coating 100.

[0026] The lotion embodiment of the present invention comprises a combination of nano-sized fragments combined with vitamins, amino acids, nutrient compounds, and minerals, as well as silver ions and citric acid catalyst as previously mentioned herein. This solution of the skin coating 100 can detoxify, replenish, rejuvenate, and stimulate the skin to which the skin coating is applied. Furthermore, the skin coating 100 protects the skin of harmful outside environmental factors by absorbing thereof so as to prevent entry through the skin. Bacteria are attracted to silver ions and citric acid due to recognition as a food source, the skin coating 100 will release the chemical solution that will easily enter the microorganism through membrane transport proteins and cause irreversible damage to the DNA and protein structure causing metabolic and reproductive functions to stop. This is especially effective and important for viruses and bacteria absorption prevention by the skin.

[0027] The alternative embodiment of the skin coating 100 utilizes gold nanoparticles and a variable thicknesses of nano-mesh structure that allows for flexibility and the use of common low-voltage batteries. In this embodiment, the skin coating 100 is able to be communicably coupled to a remote computing device and provide reports on parameters such as temperature, humidity as well as execute various assay analysis.

[0028] In the preceding detailed description, reference has been made to the accompanying drawings that form a part hereof, and in which are shown by way of illustration specific embodiments in which the invention may be practiced. These embodiments, and certain variants thereof, have been described in sufficient detail to enable those skilled in the art to practice the invention. It is to be understood that other suitable embodiments may be utilized and that logical changes may be made without departing from the spirit or scope of the invention. The description may omit certain information known to those skilled in the art. The preceding detailed

description is, therefore, not intended to be limited to the specific forms set forth herein, but on the contrary, it is intended to cover such alternatives, modifications, and equivalents, as can be reasonably included within the spirit and scope of the appended claims.

WHAT IS CLAIMED IS:

1. A skin coating that is operable to inhibit matter such as bacteria and viruses from entering the body of a user wherein the skin coating comprises:

a base, said base being comprised of a nano-mesh structure of unilaminar membranes, said base being stretchable, said base being vapor permeable, said base utilizing lipid vesicles of lipid bilayers,

a hydrolyzed zeolite and silver ion solution, said hydrolyzed zeolite and silver ion solution being disposed in said base; and

wherein the skin coating is configured to be superposed a skin are of a user so as to inhibit passage of matter into the skin of the user.

2. The skin coating that is operable to inhibit matter such as bacteria and viruses from entering the body through the skin as recited in claim 1, wherein said lipid vesicles comprise of at least one lipid bilayers.

3. The skin coating that is operable to inhibit matter such as bacteria and viruses from entering the body through the skin as recited in claim 2, wherein said at least one lipid bilayer consists of a mixture of phosphatidylcholines with hydrocarbon chains.

4. The skin coating that is operable to inhibit matter such as bacteria and viruses from entering the body through the skin as recited in claim 3, wherein the skin coating further includes a pressure sensitive adhesive, said pressure sensitive adhesive being integrated into said base on a surface thereof, said pressure sensitive adhesive having sufficient cohesive properties to adhere the skin coating to the skin of the user.

5. The skin coating that is operable to inhibit matter such as bacteria and viruses from entering the body through the skin as recited in claim 4, wherein the hydrolyzed zeolite and silver ion solution includes a stabilized ionic silver, citric acid

and nano-sized zeolite particles in combination with a structure of iron oxide nanoparticles coated with polymers.

6. The skin coating that is operable to inhibit matter such as bacteria and viruses from entering the body through the skin as recited in claim 5, wherein said base further includes gold nanoparticles and a variable thicknesses of nano-mesh structure providing flexibility of the skin coating and further providing electrical conductivity of said base.

7. The skin coating that is operable to inhibit matter such as bacteria and viruses from entering the body through the skin as recited in claim 6, wherein the hydrolyzed zeolite and silver ion solution further includes solid lipid nanoparticles, nanostructured lipid carriers, polymer-based nanoparticles and magnetic nanoparticles.

8. The skin coating that is operable to inhibit matter such as bacteria and viruses from entering the body through the skin as recited in claim 7, wherein said base is inflammation free.

9. A skin coating embodied in a form of a lotion wherein the skin coating is configured to inhibit penetration of materials such as viruses from penetration a skin of a user wherein the skin coating comprises:

a water based viscous blend having at least one vitamin, wherein said at least one vitamin comprises between ten and twenty percent of skin coating; at least one amino acids, wherein said amino acids are present in the skin coating in a percentage ranging from ten to twenty percent, at least one mineral, said at least one mineral being present in the skin coating having a composition range between ten and twenty percent, said skin coating further including between ten percent and twenty percent of silver ions with a citric acid catalyst, and further including at least one zeolite wherein said at least one zeolite comprises between twenty and forty five percent of the skin coating.

10. The skin coating embodied in a form of a lotion wherein the skin coating is configured to inhibit penetration of materials such as viruses from penetration a skin of a user as recited in claim 9, wherein the skin coating further includes solid lipid nanoparticles and nanostructured lipid carriers.

11. The skin coating embodied in a form of a lotion wherein the skin coating is configured to inhibit penetration of materials such as viruses from penetration a skin of a user as recited in claim 10, wherein the skin coating further includes polymer-based nanoparticles and magnetic nanoparticles.

12. The skin coating embodied in a form of a lotion wherein the skin coating is configured to inhibit penetration of materials such as viruses from penetration a skin of a user as recited in claim 11, invention incorporates nano-emulsions of zeolites or sodium aluminosilicates.

13. The skin coating embodied in a form of a lotion wherein the skin coating is configured to inhibit penetration of materials such as viruses from penetration a skin of a user as recited in claim 12, wherein the skin coating further includes a blend of peptides, squalane, sodium hyaluronate and cannabis derivatives.

14. The skin coating embodied in a form of a lotion wherein the skin coating is configured to inhibit penetration of materials such as viruses from penetration a skin of a user as recited in claim 13, wherein the water based viscous blend of the skin coating employs nano-carriers manufactured from liposomes.

15. The skin coating embodied in a form of a lotion wherein the skin coating is configured to inhibit penetration of materials such as viruses from penetration a skin of a user as recited in claim 14, wherein the liposomes are introduced into the skin coating utilizing emulsification.

ABSTRACT OF THE DISCLOSURE

A skin coating being provide in a first embodiment and a second embodiment wherein the skin coating is configured to inhibit penetration of materials such as but not limited to bacteria, viruses, fungus, heavy metal toxins from entering the body of a user. The skin coating of the present invention in a first embodiment is a water based viscous solution that includes a plurality of components wherein one of the components is at least one zeolite. The first embodiment further includes polymer-based nanoparticles and magnetic nanoparticles. The second embodiment of the present invention is a nano-mesh structure of unilaminar membranes having stretchable characteristics and is vapor permeable. The second embodiment having a base of utilizing lipid vesicles of lipid bilayers. The base layer of the second embodiment includes hydrolyzed zeolite and silver ion solution.