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【Abstract】

The present invention aims to provide an extract extracted from phellinus linteus and cosmetics containing the extract, and more particularly, to a phellinus linteus extract as a natural product having excellent free radical elimination process, antioxidant activity and whitening, without any stability or safety issues of the skin. The present invention also aims to provide a cosmetics composition containing phellinus linteus extract that is able to fundamentally prevent skin aging by having anti-hyaluronidase and anti-elastase effects. It further consists of adding the extract to cosmetics, such as emollient toilet water (skin), nutrient face lotion (lotion), nutrient cream, massage cream, essence, face pack, and emulsion-type foundation.

【Key Words】

phellinus linteus, free radical elimination activity, antioxidant activity, whitening

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【DESCRIPTION】

【Title of Invention】

COSMETICS CONTAINING PHELLINUS LINTEUS EXTRACTS

【Detailed Description of the Invention】

【Technical Field】

【Background Art】

The present invention is directed to an extract extracted from phellinus linteus and cosmetics containing the same, and more particularly to cosmetics having free radical elimination activity, antioxidant activity and whitening effect.

Skin aging normally involves formation of free radicals or active oxygen by external environmental factors or ultraviolet rays. Generated active oxygen or free radical cause the cell membrane to be attacked, resulting in inflammation of the skin. Inflammated tissue destroys protein or genetic material by using physiological mechanisms, resulting in skin aging such as formation of wrinkles. Accordingly, inhibition and prevention of all steps involved in the skin aging mechanism can fundamentally reduce skin aging.

Active oxygen is formed when oxygen is influenced by ultraviolet light or an enzyme. The active oxygen oxidizes fatty acids to produce peroxides, and creates a hindrance by oxidizing the biomembrane phopholipids in vivo. Generated peroxide and active oxygen promotes aging through damaged genes. This active oxygen also causes skin blackening by affecting melanin producing mechanism of the tyrosine. Inhibiting the active oxygen is an important element of anti aging cosmetics. General cosmetics, pharmaceuticals, active oxygen inhibitor used as a food ingredient and substances having oxidative effect are known, but their use as synthetic products is limited due to their poor safety with long term use on skin. Natural substances usually have low active oxygen inhibiting effect, but guarantees safe application on human skin. Accordingly, there is a demand for substances having high anti oxygen inhibiting effect and antioxidant effect while having a different effect on the skin.

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An elastic fiber forms a crosslink with the collagen fiber in the epiderm. Sagging and loss of skin elasticity occurs with age by secretion of elastase, an enzyme that breaks down elastine from fibroblasts, due to various factors such as continued exposure to ultraviolet light and inflammation of the skin. At the tissue level, there is increase in inflammatory cell infiltration, deficiency and agglomeration of the elastine fiber, and decrease in collagen fiber. At the biochemical level, there is a rapid increase of elastase activity. Elastase is the sole enzyme known to date that is able to degrade elastine, and inhibiting elastase can fundamentally reduce skin aging. In prior art, humectants and anti-inflammatory drugs were added to cosmetics to delay skin aging, and used on the tissue in which elastine and collagen crosslinkages were broken, but there exists a fundamental limitation to delaying aging. Thus, there is a need for inhibitors that fundamentally inhibit collagen and elastine which maintain skin elasticity.

Studies were conducted to find new functional substances as an alternative to conventional raw materials with anti-aging effect and drawbacks. Various natural substances used as herb medicine in the past are targeted for studies, due to their exceptional stability and useful medicinal properties.

Hyaluronidase activity involves wide in vivo distribution. Hyaluronidase is an enzyme existing on the skin, and degrades hyaluronic acid. Hyaluronic acid is a straight chain polysaccharide formed by cross-linking β-D-N-acetylglucosamine with β-D-glucouronic acid, and is a class of glucoamino glucan (GAG). Hyaluronic acid in the connective tissue causes cells to retain moisture by forming a matrix within the tissue. Hyaluronic acid decreases with age, and with decrease in water retention capability of the cells, aging occurs. Therefore, inhibiting Hyaluronic acid activity, which degrades Hyaluronic acid, affects stability of the Hyaluronic acid used in pharmaceutical preparations, in the dose left after application on skin, and existing on skin.

Whitening activity is described below. The skin has several important functions, one of which is its ability to produce melanin to protect the body from ultraviolet rays of the sunlight.

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Melanin is produced in the melanocyte skin cells, and distributed to the skin surface to form a natural screening against ultraviolet rays that are harmful to the body. At the base of melanin production is enzyme tyrosinase synthesized at the melanocyte. Tyrosinase uses tyrosine as an aminoacid substrate to produce DOPA and then Dopaquinone. Several steps of redox, condensation reactions of Dopaquinone produces black colored melanin. Ascorbic acid (Patent Application Publication No. 4-9320), hydroquinone (Patent Application Publication No. 6-192062), kojic acid (Patent Application Publication No. 56-7710), albutine (Patent Application Publication No. 4-9315) and a fraction of extracts having tyrosinase inhibiting activity are thus used for whitening cosmetics. However, prescription is limited due to issues such as coloring caused by poor stability, foul smell, ambiguous in-vivo potency and efficacy, and safety. Although the Inhibiting effect of tyrosinase has been verified, its effect is low in experiments carried out at levels similar to the actual body level. Therefore, there is a demand for inhibition effect by using melanoma cell culture that is similar to the body level. Use of hydroquinone is banned as a carcinogenic substance. Also, kojic acid and ascorbic acid are very unstable substances. Maillard reaction occurs if cosmetics containing a small quantity of these substances is stored for several weeks at room temperature. Conversely, natural products are considered as a good whitening material due to its high safety while having useful components.

In response to the aforementioned problems, there have been efforts to discover extracts having several fundamentally skin aging inhibiting effects. Extracts include plant extracts having excellent safety, such as herbs used as oriental herbal medicine, vegetable, fruits, and flowers.

【Tehnical Problem】

An object of the present invention is to provide a natural extract having excellent whitening effect, free radical elimination activity and antioxidant activity, without any safety and stability issues.

Another object of the present invention is to provide a cosmetics composition containing the extract having aforementioned effects.

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【Embodiments】

The present invention aims to provide a phellinus linteus extract as a natural product having excellent whitening effect, free radical elimination activity and antioxidant activity, and without any safety and stability issues.

The present invention also aims to provide a cosmetics composition containing phellinus linteus extract, which can fundamentally prevent skin aging due to its anti-elastase and anti-hyaluronidase effects. Further, the prevent invention involved adding this extract to the cosmetics, such as emollient toilet water (skin), nutrient face lotion (lotion), nutrient cream, massage cream, essence, face pack, and emulsion-type foundation.

Defined in more detail, phellinus linteus is first completely dried until there is no change in its weight. A certain amount of purified water and yeast extract based on the dry weight is added and the mixture is fermented for three days. Fermented broth is then separated and its antioxidative activity is measured. Cultures are separated from extracts having the highest antioxidative activity based on several repeated experiments. Separated cultures are each cultivated in the TSA (Triptic Soy Broth) medium for one day and fermented as above. At least one extraction solvent selected from the group consisting of water, ethanol, methanol, propanol, butanol, acetone, ehtylacetate, hexane, benzene, chloroform, glycerine, ethylene glycol and propylene glycol is added to the culture in a volume content of 1 to 20 times the culture. Extraction method consists of extraction through heating between 4 and 20 hours at 50 to 95℃ while the solvent is prevented from evaporating using a cooling condenser. Active components can also be extracted through deposition between 1 and 15 days at 5 to 37℃. phellinus linteus extract extracted in this way is then added to cosmetics in an amount of 0.001 to 10 weight%, preferably 0.001 to 5 weight%, after complete vacuum evaporation of the collected solvent that is vaporized out using a distillation apparatus having a cooling condenser.

In the present invention, additional additives such as nutritional supplements, preservatives, pigmentation and aroma may be adequately added to the cosmetics composition as necessary.

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The present invention is described hereinafter in detail using exemplary embodiments and experimental examples. However, the present invention is not limited to the embodiments described hereafter. By “%” it is meant “weight%” unless defined otherwise.

[**Example 1**] First Culture Experiment

Phellinus linteus was washed with water and completely dried until there was no change in its weight. Then, 10g of the phellinus linteus triturated by a mixer was added to an Erlenmeyer flask (500ml) together with 1g of yeast (Saccharomyces cerevisiae) and 100ml of purified water. The mixture was fermented at 250 rpm for 72 hours, at 35℃.

Antioxidant activity of the culture medium was measured as described hereafter. DPPH free radical elimination method was used to measure antioxidant activity. Culture sample was melted in 4ml of 1.5 X 10-4 M MeOH. Then, 1ml of DPPH MeOH solution was added, the mixture was left at room temperature for 30 minutes, and absorbance at 517nm was measured. The amount (μg/ml) of culture sample needed to reduce the absorbance of the control group, not added with the culture sample, by half was indicated as RC50 (reductant concentration). At the same time, RC50 concentration of the extract contained in the reaction solution was 950 (μg/ml).

[**Example 2**] Manufacturing phellinus linteus extract

1kg of phellinus linteus, 0.1g yeast extract and 10kg of water were added to 45ml of culture medium obtained in example 1 and then the mixture was fermented at 250 rpm for 72 hours, at 35℃. 10kg of water was added to the culture as a solvent, and extracted by boiling for 5 hours in the extractor having a cold condenser. The extract was obtained by using sterilized filter papers of 0.45 μm and 0.2 μm for complete sterilization. It was then cooled to room temperature, left to mature for seven days at 5 to 15℃, and only the watt was filtered twice through

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the filter paper. The extract was vacuum evaporated at 60℃ at a distillation apparatus having a cooling condenser to obtain a yield of 105g (dry weight).

[**Example 3**]

102 g (dry weight) of the extract was obtained in the same manner as Example 2 except for the following: 1kg of phellinus linteus, 0.1g yeast extract and 10kg of water were added to 45ml of culture medium, and the the mixture was fermented at 250 rpm for 72 hours, at 35℃. 10kg of aqueous ethanol solution (50 weight%) was added to the culture as a solvent for extraction.

[**Example 4**]

98g (dry weight) of the extract was obtained in the same manner as Example 2, except that extraction occurred using 10ℓ of 80% aqueous ethanol solution as a solvent.

[**Example 5**]

122g (dry weight) of the extract was obtained in the same manner as Example 2, except that extraction occurred using 15ℓ of ethanol as a solvent.

[**Example 6**]

The extract was extracted by depositing in 20ℓ of ethanol as a solvent for 7 days at 15 to 37℃. Extract was filtered through 400 mesh filter, left to mature for 7 days at 5 to 15℃, and only the watt was filtered twice through the filter paper.

118g (dry weight) of the extract was obtained in the same manner as Example 2, except that it was heated in water at 70℃, and there was complete vacuum evaporation of the collected solvent that vaporizes out.

[**Examples 7 to 21**]

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Extraction occurred in the same manner as Example 6 using the solvents listed in Table 1 .Results are listed below in Table 1.

[Table 1]

Experimental Results for Examples 6 to 21

	Extracted Solvent	Dry Weight of the Final Extract (Unit: g)
Example 7	50% Aqueous Ethanol Solution	100
Example 8	80% Ethanol	134
Example 9	Methanol	125
Example 10	50% Methanol	105
Example 11	80% Methanol	135
Example 12	n-propanol	120
Example 13	Isopropanol	101
Example 14	n-butanol	121
Example 15	Glycerine	76
Example 16	Propylene Glycol	86
Example 17	Butylene Glycol	99
Example 18	Benzene	54
Example 19	Chloroform	42
Example 20	Hexane	92
Example 21	Acetone	88

[Prescription Example 1]

Prescription for the emoillent toilet water (skin) among cosmetics containing phellinus linteus is listed below. The total weight is 100 parts by weight, and phellinus linteus extract of Example 5 was used.

Raw Material	Parts by weight

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Phellinus Linteus extract	0.1
Glycerine	3.0
Butylenes glycol	2.0
Propylene glycol	2.0
Carboxyvinyl polymer	0.1
Ethanol	10.0
Triethanol amine	0.1
Purified water	Residue

[Prescription Example 2]

Prescription for the nutrient face lotion (skin) among cosmetics containing phellinus linteus is listed below. The phellinus linteus extract of Example 5 was used.

Raw Material	Parts by weight
Phellinus Linteus extract	0.1
Wax	10.0
Polysorbate 60	1.5
Sorbitan Sesquioleate	0.5
Liquid Paraffin	10.0
Squalane	5.0
Caprlic/ Capric Triglyceride	5.0
Glycerine	5.0
Butylene glycol	3.0
Propylene glycol	3.0
Triethanol amine	0.2
Purified water	residue

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[Prescription Example 3]

Prescription for the nutrient cream (skin) among cosmetics containing phellinus linteus is listed below. The phellinus linteus extract of Example 5 was used.

Raw Material	Parts by weight
Phellinus Linteus extract	0.1
Wax	4.0
Polysorbate 60	1.5
Sorbitan Sesquioleate	0.5
Liquid paraffin	5.0
Squalane	5.0
Caprlic/ Capric Triglyceride	5.0
Glycerine	3.0
Butylene glycol	3.0
Propylene glycol	3.0
Carboxyvinyl Polymer	0.1
Triethanol amine	0.2
Purified water	Residue

[Prescription Example 4]

Prescription for the massage cream among cosmetics containing phellinus linteus is listed below. The phellinus linteus extract of Example 5 was used.

Raw Material	Parts by weight
Phellinus Linteus Extract	0.1
Wax	10.0
Polysorbate 60	1.5
Sorbitan Sesquioleate	0.8
Liquid Paraffin	40.0

Squalane	5.0
Caprlic/ Capric Triglyceride	4.0
Glycerine	5.0
Butylene glycol	3.0
Propylene glycol	3.0
Triethanol amine	0.2
Purified water	Residue

[Prescription Example 5]

Prescription for the face pack among Cosmetics containing phellinus linteus is listed below. The phellinus linteus extract of Example 5 was used.

Raw Material	Parts by weight
Phellinus Linteus extract	0.1
Polyvinyl Alcohol	13.0
Sodium Carboxymethyl Cellulose	0.2
Allantoin	0.1
Ethanol	5.0
Nonylphenyl ether	0.3
Purified water	Residue

[Prescription Example 6]

Prescription for the emulsion-type foundation among cosmetics containing phellinus linteus is listed below. The phellinus linteus extract of Example 5 was used.

Raw Material	Parts by weight
Phellinus Linteus Extract	0.1
Wax	2.0
Cyclomethicone	2.0
Liquid Paraffin	5.0

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Squalane	5.0
Stearic acid	2.0
Caprlic/ Capric Triglyceride	4.0
Glycerine	4.0
Propylene glycol	3.0
Butylene glycol	3.0
Triethanol amine	1.0
Aluminum Magnesium Silicate	0.5
Pigment	12
Purified water	Residue

[Experimental Example 1]

Measuring antioxidant effect (**Superoxide dismutase(SOD)-like Effect)**

The body consists of a defense function to remove free radicals. Antioxidant enzymes such as superoxide dismutase, glutathione peroxidase, and catalase are used to perform the defense function. Superoxide dismutase(SOD) synthesizes peroxide from oxygen using the formula 2:O2- + 2H+ → H2O2 + O2. , and Catalase synthesizes water from the peroxide using the formula H2O2 + O2 → 2H2O + O2.

Experimental Method

The radical elimination capability of the superoxide was measured for the phellinus linteus extract obtained from Examples 1 to 21. Superoxide dismutase function established on Xanthine/Xanthine oxidase system was measured by the SOD Test Wako method.

0.1mL of phellinus linteus extract for each Example was added into 2.3mL of 0.05M Na2CO3 solution, 0.1mL of 3mM Xanthine(sigma, X4002), 0.1mL of 3mM EDTA, 0.1mL of 0.15% BSA, and 0.1mL of 0.75mM NBT and left for 20 minutes at 25℃. Next, 0.1mL of Xanthine oxidase(sigma, X4376) was added and the mixture was reacted for 20 minutes at 25℃, followed by adding 0.1mL of 6mM CuCl2 to measure absorbance at 560nm of UV-Visible spectrum.

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0.1mL of distilled water was added instead of 0.1mL of Xanthine oxidase in the Control.

[Table 2] Antioxidant Effect of Phellinus Linteus Extract

Example	Concentration of extract added in the reaction solution (μg/ml)	Antioxidant effect (%)
Example 2	1,000/ 100	100/45
Example 3	1,000/ 100	100/56
Example 4	1,000/ 100	100/28
Example 5	1,000/ 100	100/54
Example 6	1,000/ 100	100/35
Example 7	1,000/ 100	100/42
Example 8	1,000/ 100	100/56
Example 9	1,000/ 100	85/56
Example 10	1,000/ 100	100/45
Example 11	1,000/ 100	100/39
Example 12	1,000/ 100	100/58
Example 13	1,000/ 100	100/44
Example 14	1,000/ 100	100/50
Example 15	1,000/ 100	85/20
Example 16	1,000/ 100	80/46
Example 17	1,000/ 100	82/25
Example 18	1,000/ 100	40/21
Example 19	1,000/ 100	42/22
Example 20	1,000/ 100	37/12
Example 21	1,000/ 100	32/8

[Experimental Example 2]

Free Radical Elimination Effect

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Autoxidation reaction is completed by the antioxidant giving a hydrogen atom to a peroxide radical. Reductive potential is the ability to give a hydrogen atom (electron), and a larger reductive potential means a stronger antioxidant. 1,1-Diphenyl-2-picrylhydrazyl radical(DPPH) is a reagent that can measure the reductive potential.

DPPH is a radical with a nitrogen in the center of the compound. Delocalization of the electron radical allows DPPH to exist as a stable structured radical. DPPH shows maximum absorbance at 517nm and loses absorbance when it is reduced. Therefore, reduction degree of DPPH depends on the reductive potential of the reductant.

Experimental Method

The free radical elimination effect was measured for the phellinus linteus extract obtained from Examples 2 to 21.

2mL of phellinus linteus extract was added to 1mL of 0.2mM 1,1-diphenyl-2-. picrylhydrazyl(DPPH) solution for each Example, Then the mixture was reacted at room temperature for 10 minutes and its maximum absorbance was measured at 517nm to obtain free radical elimination effect (%). Methanol was used instead of DPPH for the Control, and equal concentration of 2mL phellinus linteus extract was also added.

Free Radical Suppression Ratio (%) = [1-(E-B)/C] × 100
(B : Control Group, C : Standard Group, E : Sample Group)

[Table 3]
Free radical elimination effect of the phellinus linteus extract

Example	Concentration of extract added in the reaction solution (μg/ml)	Free Radical Elimination Activity (%)
Example 2	100/10	88/34
Example 3	100/10	89/56

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Example 4	100/10	93/51
Example 5	100/10	79/42
Example 6	100/10	58/28
Example 7	100/10	92/50
Example 8	100/10	81/38
Example 9	100/10	75/38
Example 10	100/10	83/44
Example 11	100/10	90/36
Example 12	100/10	100/40
Example 13	100/10	100/45
Example 14	100/10	100/58
Example 15	100/10	40/20
Example 16	100/10	59/25
Example 17	100/10	50/18
Example 18	100/10	36/12
Example 19	100/10	35/11
Example 20	100/10	49/23
Example 21	100/10	45/20

[Experimental Example 3]

Llastase Inhibition Effect

First 1.0㎖ of each substrate solution was added into the test tubes, followed by potassium phosphate buffer solution and distilled water. 0.2㎖ of the extract sample solution (extract sample added to ethanol in moderate concentration) was added to the reaction solution and reacted in temperature oven for 10 minutes at 37℃. At this time, the control added 0.2㎖ of each solvent instead of the extracts and measured absorbance at 410㎚ wavelength using photoelectron spectrometer.

Elastase inhibition raio (%) = [1 - (enzyme activity of each extract / enzyme activity of

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control)] X 100

[Table 4]

elastase inhibition effect of the phellinus linteus extract

Example	Concentration of extract added in the reaction solution (μg/ml)	Elastase Inhibition Ratio (%)
Example 2	1,000/ 250	98/59
Example 3	1,000/ 250	100/68
Example 4	1,000/ 250	88/75
Example 5	1,000/ 250	100/81
Example 6	1,000/ 250	100/85
Example 7	1,000/ 250	97/70
Example 8	1,000/ 250	100/78
Example 9	1,000/ 250	100/79
Example 10	1,000/ 250	100/69
Example 11	1,000/ 250	100/72
Example 12	1,000/ 250	100/78
Example 13	1,000/ 250	100/80
Example 14	1,000/ 250	100/81
Example 15	1,000/ 250	85/32
Example 16	1,000/ 250	100/61
Example 17	1,000/ 250	82/49
Example 18	1,000/ 250	40/21
Example 19	1,000/ 250	42/19
Example 20	1,000/ 250	37/8
Example 21	1,000/ 250	40/25

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[Experimental Example 4]

measuring hyaluronidase inhibition effect

Measurement was centered on the Inhibition activity of the Inert enzyme's activation phase caused by compound 48/80, using Hyaluronidase (Sigma, Type 4). Phellinus linteus extract sample was dissolved in 100 ml of 0.1 M acetic acid buffer solution (pH 4.0) and placed in the test tube. Then, 0.1 mg enzyme dissolved in 50 ml of acetic acid buffer solution was added and left for 20 minutes at 37 ℃. Finally, 200 mg sodium hyaluronate dissolved in 250 ml acetic acid buffer solution was added and left for 40 minutes at 37 ℃, followed by 100 ml of 0.4 mole sodium hydroxide which was cooled. Afterwards, 100 ml of borohydride buffer solution (pH 9.1) was added, constant temperature maintained for 20 minutes at 37℃, and absorbance measured at 585 nm. Acetic acid buffer solution added to phellinus linteus extract sample is used for the Control. Inhibition Effect (%) was calculated by multiplying 100 to the ratio between Control Experiment Absorbance and Absorbance of substance having phellinus linteus extract.

[Table 5]

Hyaluronidase Inhibition Rate of phellinus linteus extract

Example	Extract concentration contained in the reaction solution (μg/ml)	Inhibition Rate of hyaluronidase (%)
Example 7	1,000/100	70/32
Example 10	1,000/100	80/40
Example 12	1,000/100	68/32
Example 13	1,000/100	67/30
Example 14	1,000/100	60/25
Example 18	1,000/100	35/5
Example 21	1,000/100	75/25

[Experimental Example 5]

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measuring whitening effect via inhibition of melanin production in the cells.

Melanocyte culture was used to test melanin production inhibition function at the cell level. 10 % of the B15 melanoma cells were cultured in an environment of 5 % carbon dioxide, for two days until 1.0 X 108 cell/ T25 flask was reached. Afterwards, culture intermediate was removed and trypsin was added, followed by centrifugation to observe blackness degree of the cells. Number of melanin existing in cells was calculated by first washing collected cells with 5 % Trichloroacetic acid, treating with ether-ethanol solution and ether, followed by treating 1 mole sodium hydroxide to dissolve melanin in the solution, at 90 ℃. Melanin in the solution was measured at 475 nm and the number of cells were counted to weigh melanin produced per unit cell, defining inhibition effect (%).

[Table 6]

measurement results for whitening using phellinus linteus extracts.

Example	Extract concentration contained in the reaction solution (μg/ml)	Inhibition Rate of Melanin Production (%)
Example 7	1,000/100	92/48
Example 10	1,000/100	92/52
Example 12	1,000/100	92/58
Example 13	1,000/100	88/41
Example 14	1,000/100	89/52
Example 19	1,000/100	100/70
Example 21	1,000/100	72/38

[Experimental Example 6]

To test phellinus linteus effect on skin elasticity, it was applied to center of the left eye of 20 people twice a day. Center of the right eye was treated with the Control. Skin surface elasticity was measured by Corneometer CM 80 and Cutometer SEM 474, 14 days before and after treating

with cosmetics containing phellinus linteus extract. Increase in Moisturization value compared to the Control was defined as percentage as measured by Cutometer CM 820, with the average value of the 20 subjects listed below. Skin elasticity measurement by Cutometer SEM 474 measures wrinkle depth. Lower value means better elasticity. Reduced Elasticity values compared to the Control was defined as percentage, and the average values of the 20 subjects are listed below.

[Table 7]

Increasing improvement of skin surface moisturization and elasticity by using the phellinus linteus extract

Prescription Example	Skin moisturization effect (%)	Skin Elasticity Effect (%)
Prescription 1	23	20
Prescription 2	29	38
Prescription 3	38	44
Prescription 4	36	41
Prescription 5	29	41
Prescription 6	16	32

【Advantageous Effects】

It was discovered that the extracts extracted by the extraction method of the invention showed excellent whitening effect, free radical elimination activity and antioxidant activity, while simultaneously solving safety and stability issues. In addition, experiments were carried out with the extract, in which a fixed concentration of the extract was added to the cosmetics composition and then directly applied on the skin. Results showed clear skin elasticity positive improvements in the skin condition affected by aging.

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【Claims】

【Claim 1】

A method of manufacturing a phellinus linteus extract comprising the steps of,

1) triturating, drying and washing the phellinus linteus;

2) adding yeast and purified water to the triturated phellinus linteus for fermentation;

3) extracting fine powder phellinus linteus using 1 to 20 solution weight ratio of a solvent; and

4) collecting the extract through evaporation of an extraction solution by vacuum boiling

【Claim 2】

The method of manufacturing a phellinus linteus extract of claim 1,

characterized in that the extraction step comprises extracting by deposition between 1 and 15 days at a temperature between 5 and 37℃.

【Claim 3】

The method of manufacturing a phellinus linteus extract of claim 1,

characterized in that at least one extraction solution is selected from the group consisting of ethanol, methanol, propanol, butanol, glycerine, propylene glycol, butylene glycol, acetone, acetylacetate, benzene, and chloroform.

【Claim 4】

A cosmetics comprising 0.0001 to 10 weight% (dry weight) of phellinus linteus extract manufactured according to the method described in any one of claims 1 to 3.

【Claim 5】

The cosmetics of claim 4, wherein the cosmetics is a emollient toilet water (skin).

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【Claim 6】

The cosmetics of claim 4, wherein the cosmetics is a nutrient face lotion (lotion).

【Claim 7】

The cosmetics of claim 4, wherein the cosmetics is a nutrient cream.

【Claim 8】

The cosmetics of claim 4, wherein the cosmetics is a massage cream.

【Claim 9】

The cosmetics of claim 4, wherein the cosmetics is a face pack.

【Claim 10】

The cosmetics of claim 4, wherein the cosmetics is an emulsion-type foundation.

【Claim 11】

The cosmetics of claim 4, wherein the cosmetics is an essence.