VeryBerry™ WHITE

This product is a mixture of 1,3-Propanediol solutions of the seed of *Litchi chinensis* Sonn. (*Sapindaceae*), the fruit of *Hippophae rhamnoides* L. (*Elaeagnaceae*), the peel of *Citrus unshiu* Marcowicz. (*Rutaceae*) and the leaf of *Mangifera indica* L. (*Anacardiaceae*), powdered water extract of the fruit of *Vaccinium vitis-ideae* (*Ericaceae*), N-Acetyl-L-Cysteine and Sodium Sulfite.

Manufacturing method

Extract solution with 1,3-Propanediol solution from the seed of *Litchi chinensis* Sonn. (*Sapindaceae*), the fruit of *Hippophae rhamnoides* L. (*Elaeagnaceae*), the peel of *Citrus unshiu* Marcowicz. (*Rutaceae*) and the leaf of *Mangifera indica* L. (*Anacardiaceae*). Then mix the solution with powdered water extract of the fruit of *Vaccinium vitis-ideae* (*Ericaceae*), N-Acetyl-L-Cysteine and Sodium Sulfite, after mixing, and filter the mixture to obtain the product.

Raw material mixture : 90 g → Product: approximately : 0.8－1 kg

Description

This product is pale orange to pinkish orange liquid, with slightly pungent odor.

Identification

- Anthocyanin (Lingonberry fruit extract)
  Add 5 mL of methanol to 1 drop of this product, and heat at 80℃ for 10 minutes in a water bath, and add 0.2 mL of hydrochloric acid; pale red color develops.

- Flavonoid (Citrus unshiu peel extract)
  Take 1mL of this product, and add methanol to make 50 mL as the test solution. Use 2 mL of this test solution, add 0.1 g of magnesium ribbon and 1 mL of hydrochloric acid and allow to stand; pale red color develops.

- Saponin (Litchi seed extract)
  To 0.3 mL of this product add 5 mL of acetic anhydride. Add gently 1mL of sulfuric acid; reddish brown color develops in contact zone.

- Polyphenol (Seaberry fruit extract)
  Add 3.5 mL of water to 30 µL of this product, add 0.2 mL of Folin-Denis TS*[1] and 0.4 mL of saturated sodium carbonate*[2]; blue color develops.

*1: Folin-Denis TS: Dilute the Folin-Ciocalteu reagent 2-fold with water

*2: Add 35 g of Sodium carbonate, anhydrous with 100 mL of water and dissolve at 70 to 80 ℃. Allow to stand for 1 night, remove the precipitate and use supernatant solution.

・ Xanthone (Mango leaf extract)

Add 2 mL of ethyl acetate to 1mL of this product, mix and allow to stand. Add 200 µL of 1N sodium hydroxide to 1 mL of upper layer in this solution; yellow color develops in lower layer.

・ N-Acetyl-L-Cysteine

Weigh accurately about 0.5 g of this product, add sodium disulfite [K8501, Special class] to make exactly 100 mL, then mix and filter this solution through a membrane filter with a pore size not exceeding 0.45 µm. This solution uses as the sample solution. Separately, weigh accurately about 0.05 g of N-Acetyl-L-Cysteine RS, add sodium disulfite [K8501, Special class] to make exactly 100 mL, then mix and filter this solution through a membrane filter with a pore size not exceeding 0.45 µm. Use this solution as the standard solution. Perform the test with 5 µL each of the sample solution and standard solution as directed under Liquid Chromatography according to the following conditions, and confirm identity of the retention time of the component and that of an authentic specimen. In addition, observe the peak shapes of the component between sample and test solutions.

Operating conditions

Detector : An ultraviolet absorption photometer（wavelength 214 nm）

Column : A stainless steel column 4.6 mm in inside diameter and 25 cm in length, packed with octadecylsilanized silica gel for liquid chromatography (5 µm particle in diameter).

Column temperature : A constant temperature of about 40℃.

Mobile phase : Dissolve 6.8 g of sodium dihydrogen phosphate dehydrate in 1000 mL of water, adjust to pH 3.0 with phosphoric acid.

Flow rate : Adjust the flow rate so that the retention time of N-Acetyl-L-Cysteine is about 5 minutes.

pH (1→10) 3.0 to 4.5

Purity

・ Heavy metals

Take 1.0 g of this product to determine heavy metals according to the method 2: the limit is not more than 20 ppm. Use 1.0 mL of standard lead solution as the control solution.

・ Arsenic

Take 1.0 g of this product to prepare the test solution according to the method 3, and perform the test: the limit is not more than 2 ppm.

Bacterial Count

Take 5g of this solution, make 50mL test solution with diluent and perform the bacterial count test, using standard agar medium according to Hygiene Test Method; the limit is not more than 1×10^2 cfu/g.

Fungus Count

Take 5g of this solution, make 50mL test solution with diluent and perform the fungus count test using potato dextrose agar medium added chloramphenicol according to Hygiene Test Method; the limit is not

more than 1×10^2 cfu/g.

Coli form

Take 1mL of the solution which prepare the bacterial count test, and perform the coli form test using BGLB medium according to Hygiene Test Method; Negative / Not observe any colony.

These standards and test method are referred to General Notices and General Tests, Processes and Apparatus of The Japanese Standards of Quasi-drug Ingredients, unless otherwise specified.

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