

PhytoRetinol™-3C

This product is an oil extract obtained from the fruits of *Psoralea corylifolia* Linnè (*Leguminosae*), and it comprises not less than 3.0% of Bakuchiol ($C_{18}H_{24}O$: 256.38).

Manufacturing method

Add *n*-Hexane (JIS K8848) to the fruits of *Psoralea corylifolia* Linnè (*Leguminosae*) after extracting, remove *n*-hexane by evaporation, add Caprylic/capric Triglyceride and *Rosmarinus Officinalis* (Rosemary) Leaf Extract which is obtained and extract by supercritical extraction method, mix well as the product.

Raw material: Fruits of *Psoralea corylifolia* Linnè about 1.0~1.3kg —————▶ Product: about 1.0 kg

Description

This product is a brown to orange brown oil liquid, and it is having characteristic odor.

Identification

- Infrared Spectrophotometry (Bakuchiol)

Determine the infrared absorption spectra of this product as directed liquid film method; exhibit wavelength at around 3350cm^{-1} , 1650cm^{-1} , 980cm^{-1} , 922cm^{-1} .

- Infrared Spectrophotometry (Caprylic/capric Triglyceride)

Determine the infrared absorption spectra of this product as directed liquid film method; exhibit wavelength at around 2930cm^{-1} , 1745cm^{-1} , 1455cm^{-1} , 1160cm^{-1} .

Specific Gravity d_{25}^{25} : 0.940 to 0.960 (Method 1, C)

Refractive Index n_D^{25} : 1.440 to 1.465

Purity Test

- Heavy metals

Take 2.0 g of this product, determine heavy metals according to method 3: the limit is not more than 10 ppm. Use 2.0 mL of standard lead solution as the control solution.

- Arsenic

Take 2.0 g of this product, prepare the test solution according to method 3, and perform the test: the limit is not more than 1 ppm.

Residue on Ignition : 0.5 % max. (1g, 550°C, Method2)

Assay

- Bakuchiol

Weigh accurately about 100mg of this product, dissolve by adding 30 mL of acetonitrile, and furthermore add acetonitrile exactly to 100 mL (C_T), filter, and use the filtrate as the test solution. Separately weigh accurately about 5 mg of Bakuchiol RS (for example, manufactured by Cayman Chemical Company) and dissolve it in acetonitrile to make exactly 100 mL (C_S), and use it as the standard solution. Take exactly 10 μ L each of the test solution and the standard solution as directed under the Liquid-chromatography in accordance with the following conditions, and measure the peak areas A_T and A_S of the Bakuchiol of each solution.

$$\text{The Content (\% of Bakuchiol (} C_{18}H_{24}O : 256.38) = (A_T \times A_S) / (C_T \times C_S) \times 100$$

A_T : The area of bakuchiol in the test solution

A_S : The area of bakuchiol in the standard solution

C_T : Collection amount (mg) / Adjustment amount (mL) of the test solution

C_S : Collection amount (mg) / Adjustment amount (mL) of the standard solution

Operating Conditions:-

Detector : An ultraviolet absorption photometer (wavelength: 210nm)

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

Column Temperature: A constant temperature of about 35 $^{\circ}$ C.

Mobile Phase : Liquid A: 36vol% of acetonitrile solution

Liquid B: Acetonitrile

Gradient Condition:

Time (min)	0.01	3.00	6.00	21.00	24.00	26.00	36.00
Liquid A (%)	100	100	50	0	0	100	100
Liquid B (%)	0	0	50	100	100	0	0

Flow Rate : 1mL (Adjust a flow rate so that the retention time of Bakuchiol is about 18 minutes.)

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.

Yeast Mold 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.

Coliform

Take 1mL of the solution which prepare the bacterial count test, and perform the coliform 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.

Product Name	: PhytoRetinol™-3C
Expiry date	: 2 years from date of manufacturing
Manufacturer	: ORYZA OIL & FAT CHEMICAL CO., LTD. 1 Aza Numata Kitagata Kitagata-cho Ichinomiya-city, Aichi-pref. 493-8001 JAPAN

Published on November 26, 2020

Revised on September 25, 2021