

10) to make exactly 100 mL, and use this solution as the standard solution. Perform the test with 10  $\mu$ L each of the sample solution and the standard solution as directed under the Liquid Chromatography according to the following conditions, and determine the peak areas,  $A_T$  and  $A_S$ , of magnolol in each solution.

$$\begin{aligned} & \text{Amount (mg) of magnolol} \\ &= \text{amount (mg) of magnolol for component} \\ & \quad \text{determination} \\ & \quad \times \frac{A_T}{A_S} \end{aligned}$$

*Operating conditions—*

Detector: An ultraviolet absorption photometer (wavelength: 289 nm).

Column: A stainless steel column 4 to 6 mm in inside diameter and 15 to 25 cm in length, packed with octadecylsilanized silica gel (5 to 10  $\mu$ m in particle diameter).

Column temperature: A constant temperature of about 20°C.

Mobile phase: A mixture of water, acetonitrile and acetic acid (100) (50:50:1).

Flow rate: Adjust the flow rate so that the retention time of magnolol is about 14 minutes.

Selection of column: Dissolve 1 mg each of magnolol for component determination and honokiol in 10 mL of diluted methanol (7 in 10). Proceed with 10  $\mu$ L of this solution under the above operating conditions. Use a column giving elution of honokiol and magnolol in this order with the resolution between these peaks being not less than 5.

System repeatability: When the test is repeated 5 times with the standard solution under the above operating conditions, the relative deviation of the peak area of magnolol is not more than 1.5%.

## Powdered Magnolia Bark

### *Magnoliae Cortex Pulveratus*

コウボク末

Powdered Magnolia Bark is the powder of Magnolia Bark.

It contains not less than 0.8% of magnolol.

**Description** Powdered Magnolia Bark occurs as a yellow-brown powder, and has a slight odor and a bitter taste.

Under a microscope, Powdered Magnolia Bark reveals starch grains and parenchyma cells containing them; stone cells of various sizes or its groups; fibers 12 to 25  $\mu$ m in diameter; yellowish red-brown cork tissue; oil cells containing a yellow-brown to red-brown substance. Simple starch grains about 10  $\mu$ m in diameter and 2- to 4-compound starch grains.

**Identification** To 1.0 g of Powdered Magnolia Bark add 10 mL of methanol, stir for 10 minutes, centrifuge, and perform the test with the supernatant liquid as the sample solution as directed under the Thin-layer Chromatography. Spot 20  $\mu$ L of the sample solution on a plate of silica gel for thin-layer chromatography. Develop the plate with a mixture of 1-butanol, water and acetic acid (100) (4:2:1) to a distance of

about 10 cm, and air-dry the plate, and spray evenly with Dragendorff's TS on the plate: the yellow spot is observed at the  $R_f$  value of near 0.3.

**Total ash** Not more than 6.0%.

**Extract content** Dilute ethanol-soluble extract: not less than 12.0%.

**Component determination** Weigh accurately about 0.5 g of Powdered Magnolia Bark, add 40 mL of diluted methanol (7 in 10), heat under a reflux condenser on a water bath for 20 minutes, cool, and filter. Repeat the above procedure with the residue, using 40 mL of diluted methanol (7 in 10). Combine the whole filtrates, add diluted methanol (7 in 10) to make exactly 100 mL, and use this solution as the sample solution. Separately, dry magnolol for component determination in a desiccator (silica gel) for 1 hour or more. Weigh accurately about 0.01 g of it, dissolve in diluted methanol (7 in 10) to make exactly 100 mL, and use this solution as the standard solution. Perform the test with 10  $\mu$ L each of the sample solution and the standard solution as directed under the Liquid Chromatography according to the following conditions, and determine the peak areas,  $A_T$  and  $A_S$ , of magnolol in each solution.

$$\begin{aligned} & \text{Amount (mg) of magnolol} \\ &= \text{amount (mg) of magnolol for component} \\ & \quad \text{determination} \\ & \quad \times \frac{A_T}{A_S} \end{aligned}$$

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System repeatability: When the test is repeated 5 times with the standard solution under the above operating conditions, the relative deviation of the peak area of magnolol is not more than 1.5%.

**Containers and storage** Containers—Tight containers.

## Mallotus Bark

### *Malloti Cortex*

アカメガシワ

Mallotus Bark is the bark of *Mallotus japonica*