สารสกัดแห้งมังคุด (MANGKHUT DRY EXTRACT)

Mangosteen Rind Dry Extract

Category Antidiarrheal, wound healing, anti-inflammatory.

Mangosteen Rind Dry Extract is prepared from the powdered Mangosteen Rind by extraction with *ethanol*. It contains not less than 90.0 per cent and not more than 110.0 per cent of the labelled amount of *α*-mangostin ($C_{24}H_{26}O_6$); the labelled amount of *α*-mangostin is not less than 14.0 per cent, calculated on the dried basis.

Description Brownish yellow powder; hygroscopic.

Packaging and storage Mangosteen Rind Dry Extract shall be kept in tightly closed containers, protected from light, and stored in a cool and dry place.

Labelling The label on the container states (1) the amount of *α*-mangostin; (2) the expiration date.

Identification

A. The chromatogram of the Assay preparation shows several peaks, one of which corresponds to that of the Standard preparation, as obtained in the *Assay* (Fig. 1).

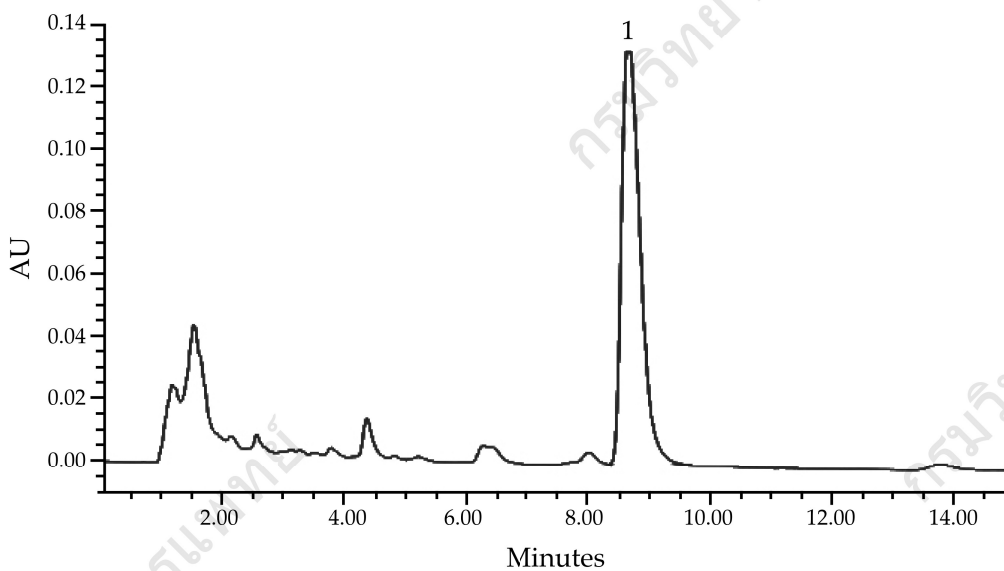

Fig. 1 HPLC Chromatogram of Mangosteen Rind Dry Extract Showing *α*-Mangostin (1)

B. Carry out the test as described in the "Thin-Layer Chromatography" (Appendix 3.1), using a high-performance plate with *silica gel GF254* as the coating substance and a mixture of 90 volumes of *chloroform* and 5 volumes of *methanol* as the mobile phase and allowing the solvent front to ascend 8 cm above the line of application. Apply separately to the plate as bands of 6 mm, 3 mL each of solutions (A) and (B). Prepare solution (A) by dissolving 10 mg of the sample, in powder, in 1 mL of *methanol*. For solution (B), dissolve 1 mg of *α-mangostin* in 2 mL of *methanol*. After removal of the plate, allow it to dry in air, and examine under ultraviolet light (254 nm), marking the quenching bands. The chromatogram obtained from solution (A) shows a quenching band (hR_f value 60 to 64), corresponding to the *α*-mangostin band obtained from solution (B). Other seven quenching bands are also observed. Subsequently

examine the plate under ultraviolet light (366 nm); the band due to α-mangostin is dark fluorescent. One dark and three blue fluorescent bands are also observed. Spray the plate with *anisaldehyde TS and* heat at 110° for about 10 minutes. The band due to α-mangostin is yellow. One brown and other two yellow bands are also observed (Fig. 2).

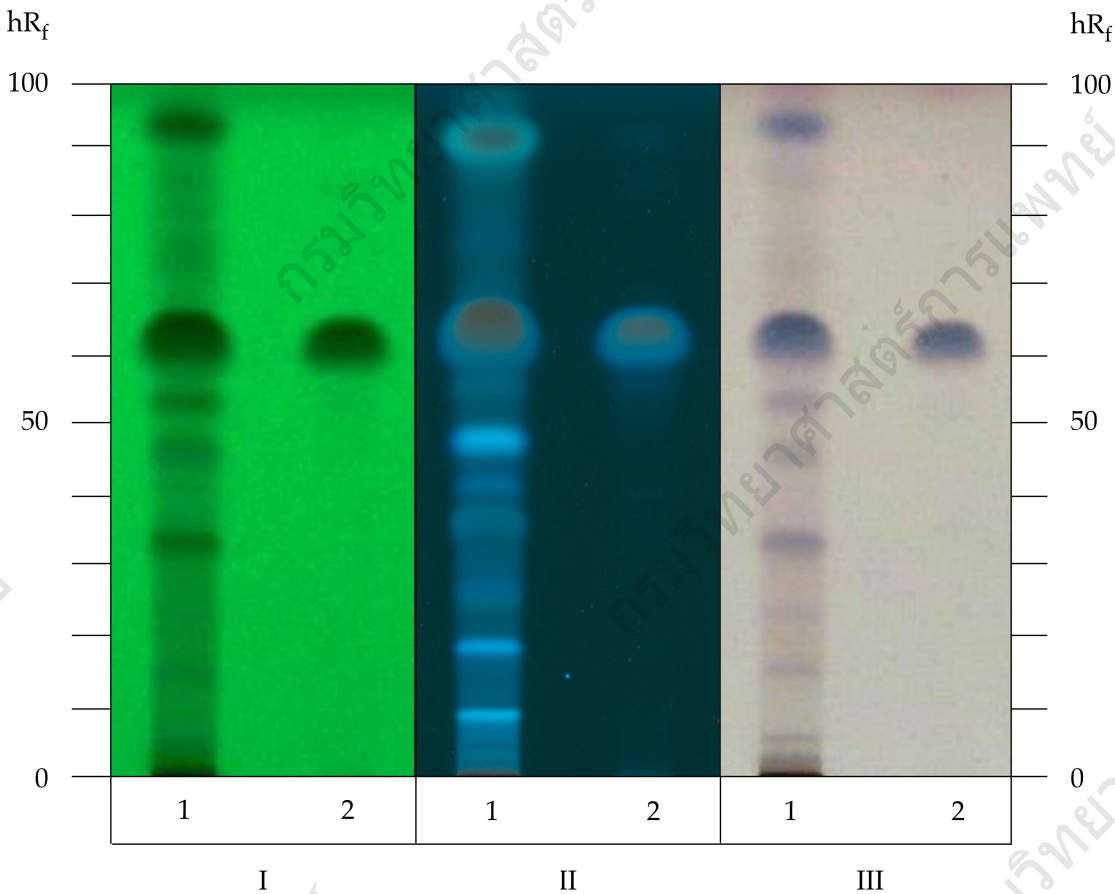

Fig. 2 Thin-Layer Chromatogram of Mangosteen Rind Dry Extract
1 = solution (A)
2 = solution (B)
I = detection under UV light (254 nm)
II = detection under UV light (366 nm)
III = dectection with *anisaldehyde TS*

Loss on drying Not more than 10.0 per cent w/w after drying at 105° to constant weight (Appendix 4.15).

Assay Carry out the determination as described in the "Liquid Chromatography" (Appendix 3.5).

Mobile phase Prepare a mixture of 70 volumes of *water* and 30 volumes of *methanol*. Make adjustments if necessary.

Standard preparations Dissolve a suitable quantity of *α*-Mangostin RS, accurately weighed, in sufficient *methanol* to obtain a stock solution having a known concentration of about 500 µg of *α*-mangostin per mL. Dilute the solution quantitatively, and stepwise with *methanol* to obtain six solutions having known concentrations of about 10, 20, 30, 40, 50, and 60 µg per mL of *α*-mangostin.

Assay preparation Transfer about 50 mg of Mangosteen Rind Dry Extract, accurately weighed, to a 100-mL volumetric flask, add 25 mL of *methanol*, sonicate until completely dissolved, and adjust with *methanol* to volume. Mix well and filter through a membrane having a 0.45-µm membrane filter.

Chromatographic system The chromatographic procedure may be carried out using (a) a stainless steel column (15 cm × 4.6 mm) packed with octadecylsilane chemically bonded to porous silica or ceramic microparticles (4.6 µm), equipped with a similarly packed guard column, (b) *Mobile phase* at a flow rate of about 1.2 mL per minute, and (c) an ultraviolet photometer set at 243 nm. To determine the suitability of the chromatographic system, chromatograph *Standard preparation*, and record the peak response as directed under *Procedure* and *Calculation*: the relative standard deviation for replicate injections is not more than 2.0 per cent.

Procedure Separately inject about 20 µL each of *Standard preparations* into the chromatograph, record the chromatograms and measure the responses for *α*-mangostin peaks. Plot the readings and draw the standard curve of best fit: the curve shows the correlation coefficient of not less than 0.999. Inject about 20 µL of *Assay preparation* into the chromatograph, record the chromatogram, and measure the response for *α*-mangostin peak.

Calculation By reference to the standard curve, calculate the content of *α*-mangostin ($C_{24}H_{26}O_6$) in the portion of the Extract taken.

Other requirements Complies with the requirements described under “Extracts” (Appendix 1.16H).