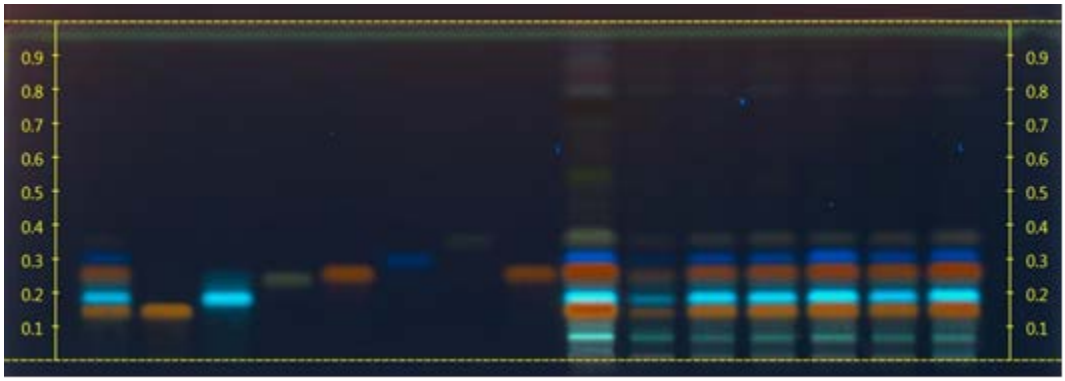
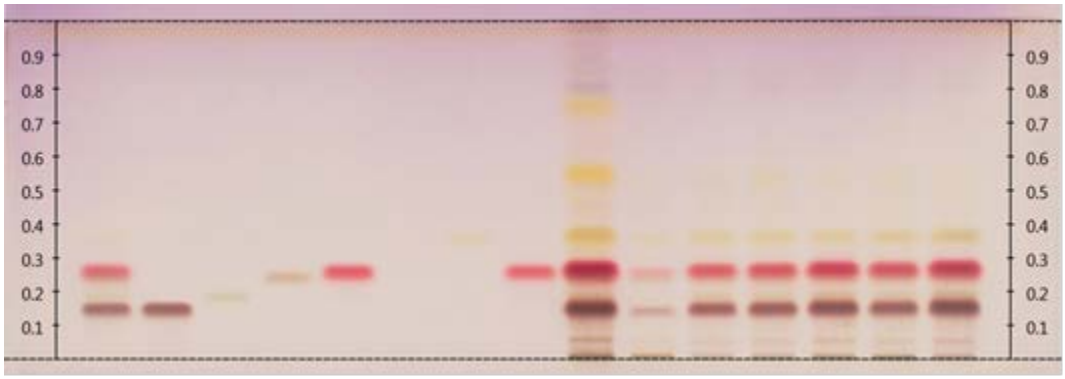
Piper methysticum Root and Rhizome – Identification

Thin-Layer Chromatography

UV 366 nm



Visible light



Typical HPTLC Chromatogram

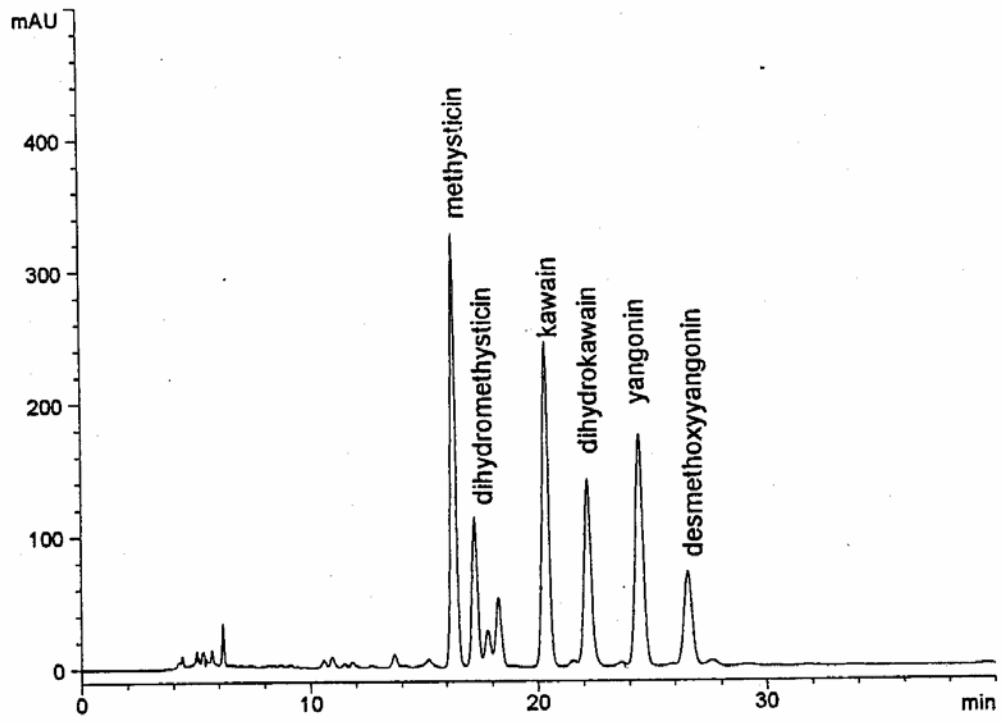
These chromatograms are supplied for information only

Track assignment: 1) Desmethoxyyangonin, dihyrokavain, dihydromethysticin, kavain (D,L-), methysticin, yangonin (0.5 mg/mL each); 2) Methysticin (0.5 mg/mL); 3) Yangonin (0.5 mg/mL); 4) Dihydromethysticin (0.5 mg/mL); 5) Kavain (D,L-) (0.5 mg/mL); 6) Desmethoxyyangonin (0.5 mg/mL); 7) Dihydrokavain (0.5 mg/mL); 8) Kavain (D,L-) (0.5 mg/mL); 9) Kava powdered extract (0.1 g/mL); 10-11) Kava root (0.1 g/mL); 12-13) *Piper methysticum* (0.1 g/mL); 14) Kava root (0.1 g/mL); 15) Kava stem (0.1 g/mL).

Sample solutions:	according to the monograph
Standard solutions:	in toluene
Plate:	HPTLC, Silica gel 60 F_{254}, 5 µm

Application volume:	2 µL, as 8-mm bands
Relative Humidity:	about 33%
Developing solvent system:	*tert*-butyl ether and cyclohexane (70:30)
Developing distance:	6 cm
Reagent for impregnation:	dissolve 8 g of caffeine in 200 mL of dichloromethane
Derivatization reagent:	anisaldehyde-sulfuric acid reagent (a mixture of 170 mL of ice cold methanol with 20 mL of glacial acetic acid, 10 mL sulfuric acid, and 1 mL anisaldehyde)
Detection:	Dip in the Reagent of impregnation, dry at room temperature for 5 min, then heat at 80 °C for 5 min. Apply samples and develop in an unsaturated chamber. Remove the plate from the chamber and dry. Treat with derivatization reagent, heat at 100 °C for 4 min, examine under UV light at 366 nm and visible light

HPLC (Powdered Kava Extract)



Representative chromatogram of Content of Kavalactones in *Piper methysticum* Root and Rhizome

This chromatogram is supplied for information only

Solution preparation:	according to the monograph
Mode:	HPLC
Detector:	UV, 220 nm
Column:	4.6-mm × 25-cm; 5-µm packing L7 (Similar to Waters YMCbasic S-5)
Column temperature:	25°±1
Flow rate:	0.6 mL/min
Injection volume:	5 µL
Mobile phase:	0.1% phosphoric acid, acetonitrile and isopropyl alcohol (64:20:16)