

## **Table 5**

**Comparative table on TLC conditions of identification  
for crude drugs in CP, JP, KP and VP**



## Comparative Table on TLC Conditions of Identification for Crude Drugs in CP, JP, KP and VP

No.	Latin name	TLC condition		(2) detection	(3) color tone on TLC	(4) marker compounds
		(1) developing solvent				
1	<i>Achyranthes bidentata</i> Blume					
	CP RADIX ACHYRANTHIS BIDENTATAE	chloroform / methanol (40 : 1)		phosphomolybdic acid TS, 110°		oleanoic acid
	KP ACHYRANTHIS RADIX	chloroform / methanol / water (8 : 2 : 0.5)		1) UV 254 nm 2) sulfuric acid TS		20-hydroxyecdysol
	VP RADIX ACHYRANTHIS BIDENTATAE	chloroform / methanol (40 : 1)		1) phosphomolybdic acid in ethanol, 110°, 10 min		oleanoic acid
2	<i>Aconitum Carmichaeli</i> Debeaux					
	JP PROCESSUS ACONITI RADIX	ethyl acetate / ethanol (99.5 / ammonia water (28) (40 : 3 : 2))		Dragendorff's TS	yellow-brown	benzoylmesaconone hydrobromide
3	<i>Alpinia oxyphylla</i> Miqel					
	CP FRUCTUS ALPINIAE OXYPHYLLAE	n-hexane / ethyl acetate (9 : 1)		1) UV 254 nm 2) dinitrophenylhydrazine dilute TS	1) dark spot 2) orange-red	
	VP FRUCTUS ALPINIAE OXYPHYLLAE	n-hexane / ethyl acetate (9 : 1)		UV 254 nm		
4	<i>Anemarrhena asphodeloides</i> Bunge					
	CP RHIZOMA ANEMARRHENAE	benzene / acetone (9 : 1)		8% vanillin in ethanol / sulfuric acid (0.5 : 5), 100°		sarsasapogenin
	KP ANEMARRHENAE RHIZOMA	chloroform / methanol / water (52 : 28 : 8)		sulfuric acid TS		anemasonin B
	VP RHIZOMA ANEMARRHENAE	benzene / acetone (9 : 1)		8% vanillin in ethanol / sulfuric acid (0.5 : 5), 100°, 5 min		sarsasapogenin
5	<i>Angelica dahurica</i> Benham et Hooker fil					
	CP RADIX ANGELICA DAHURICAE	petroleum ether / ether (3 : 2)		UV 365 nm	blue fluorescent	imperatorin, isoperatorin
	VP RADIX ANGELICA DAHURICAE	benzene / ethyl acetate (9 : 1)		UV 365 nm		
6	<i>Astragalus membranaceus</i> Bunge					
	CP RADIX ASTRAGALI	chloroform / methanol / water (13 : 7 : 2)		1) 10% sulfuric acid in ethanol, 105° 2) UV 365 nm	1) brown 2) orange-yellow	astragaloside IV
	VP RADIX ASTRAGALI MEMBRANACEI	chloroform / methanol / water (65 : 35 : 10)		10% sulfuric acid in ethanol, 105°		astragaloside IV
7	<i>Atractylodes lancea</i> De Candolle, A. chinensis Koidzumi					
	CP RHIZOMA ATRACTYLODIS	petroleum ether / ethyl acetate (20 : 1)		<i>p</i> -dimethylaminobenzaldehyde ethanol in 10% sulfuric acid	muddy green	atractydin
	VP RHIZOMA ATRACTYLODIS	petroleum ether / ethyl acetate (20 : 1)		<i>p</i> -dimethylaminobenzaldehyde ethanol in 10% sulfuric acid		
8	<i>Atractylodes ovata</i> De Candolle					
	CP RHIZOMA ATRACTYLODIS MACROCEPHALAE	petroleum ether / ethyl acetate (50 : 1)		5% vanillin in sulfuric acid	pink	atractylon
	VP RHIZOMA ATRACTYLODIS MACROCEPHALAE	petroleum ether / ethyl acetate (50 : 1)		1% vanillin in 5% sulfuric acid, 60°	pink	
9	<i>Bupleurum falcatum</i> Linne					
	CP RADIX BUPLEURI	ethyl acetate / ethanol / water (8 : 2 : 1)		2% <i>p</i> -dimethylaminobenzaldehyde in 40% sulfuric acid 60°, 365 nm	yellow	saikosaponin a, d
	JP BUPLEURI RADIX	chloroform / methanol / water (30 : 10 : 1)		sulfuric acid / ethanol (95) (1:1), 50°, 5 min	blue to blue-purple	saikosaponin a
	KP BUPLEURI RADIX	chloroform / methanol / water (30 : 10 : 1)		sulfuric acid / ethanol (95) (1:1), 50°, 5 min	blue to blue-purple	saikosaponin a
	VP RADIX BUPLEURI	ethyl acetate / ethanol / water (8 : 2 : 1)		5% <i>p</i> -dimethylaminobenzaldehyde in 40% sulfuric acid 60°, 365 nm		
10	<i>Carthamus tinctorius</i> Linne					
	CP FLOS CARTHAMI	ethyl acetate / formic acid / water / methanol (7 : 2 : 3 : 0.4)		put in a chamber pre-saturated with the vapour of ammonia	1) 4 brownish-yellow spots 2) 2 greenish-yellow spots	
	VP FLOS CARTHAMI TINCTORII	ethyl acetate / formic acid / water (8 : 1 : 1)				
11	<i>Cimicifuga heracleifolia</i> Komarov					
	CP RHIZOMA CIMICIFUGAE	benzene / ethyl acetate / formic acid (6 : 1 : 0.5)		UV 365 nm		isoterulic acid
12	<i>Cinnamomum cassia</i> Blume					
	CP CORTEX CINNAMOMI	petroleum ether / ethyl acetate (17 : 3)		ethanolic 2,4-dinitrophenylhydrazine TS		cinnamaldehyde
	JP CINNAMOMI CORTEX	hexane / ethyl acetate (2 : 1)		1) UV 254 nm 2) 2,4-dinitrophenylhydrazine TS	1) purple 2) yellow orange	
	KP CINNAMOMI CORTEX	hexane / ethyl acetate (2 : 1)		1) UV 254 nm 2) 2,4-dinitrophenylhydrazine TS	1) purple 2) yellow orange 5 orange spots	
	VP CORTEX CINNAMOMI	n-hexane / chloroform / ethyl acetate (4 : 1 : 1)		2,4-dinitrophenylhydrazine		cinnamic aldehyde
13	<i>Cornus officinalis</i> Siebold et Zuccarini					
	CP FRUCTUS CORNI	toluene / ethyl acetate / formic acid (20 : 4 : 0.5)		1) 10% sulfuric acid in ethanol, 110° 2) UV 365 nm	1) purplish-red 2) yellow orange fluorescent	ursolic acid
	JP CORNI FRUCTUS	ethyl acetate / water / formic acid (6 : 1 : 1)		4-methoxybenzaldehyde-sulfuric acid TS, 90°, 3 min	red-purple	loganin
	KP CORNI FRUCTUS	ethyl acetate / water / formic acid (6 : 1 : 1)		<i>p</i> -anisaldehyde-sulfuric acid TS, 90°, 3 min	red-purple	loganin
	VP FRUCTUS CORNI OFFICINALIS	cyclohexane / chloroform / ethyl acetate (20 : 5 : 8)		10% sulfuric acid in ethanol, 110°, 5-7 min	purplish-red	ursolic acid
14	<i>Curcuma longa</i> Linne					
	CP RHIZOMA CURCUMAE LONGAE	chloroform / methanol / formic acid (96 : 4 : 0.7)		UV 365 nm	yellow	curcumin
	JP CURCUMAE RHIZOMA	ethyl acetate / hexane / acetic acid (100) (70 : 30 : 1)				curcumin
	KP CURCUMAE LONGAE RHIZOMA	chloroform / methanol / formic acid (96 : 4 : 0.7)		3% boric acid / 10% oxalic acid (3 : 1)	3 spots 1) brick red 2) orange 3) yellow	
	VP RHIZOMA CURCUMAE LONGAE	chloroform / acetic acid (9 : 1)				
15	<i>Cyperus rotundus</i> Linne					
	CP RHIZOMA CYPERI	benzene / ethyl acetate / glacial acetic acid (92 : 5 : 5)		1) 254 nm 2) 2,4-dinitrophenylhydrazine TS	1) dark blue 2) orange-red	$\alpha$ -cyperone

No.	Latin name	TLC condition (1) developing solvent	(2) detection	(3) color tone on TLC	(4) marker compounds
16	<i>Ephedra sinica</i> Stapf	chloroform / methanol / concentrated ammonia (20 : 5 : 0.5)	ninhydrin TS, 105°	red	ephedrine hydrochloride
	CP HERBA EPHEDRAE	1-butanol / water / acetic acid (100) (7 : 2 : 1)	ninhydrin-ethanol TS (1-50), 105°, 5 min	red-purple	
	JP EPHEDRAE HERBA	n-butanol / water / acetic acid (7 : 2 : 1)	2% ninhydrin-ethanol TS, 105°, 10 min	reddish purple	
	KP EPHEDRAE HERBA	chloroform / methanol / ammonia (20 : 5 : 0.5)	ninhydrin TS, 105°, 5 min		ephedrine
	VP HERBA EPHEDRAE				
17	<i>Epimedium koreanum</i> Nakai	ethyl acetate / butanone / formic acid / water (10 : 1 : 1 : 1)	1) UV 365 nm 2) Aluminium chloride TS, UV 365 nm	2) orange red fluorescent	icariin
	CP HERBA EPIMEDII	ethyl acetate / ethanol (99.5) / water (8 : 2 : 1)	UV 254 nm	dark purple	icariin
	JP EPIMEDII HERBA	ethyl acetate / methyl ethyl ketone / formic acid / water (10 : 1 : 1 : 1)	1) UV 365 nm 2) Aluminium chloride TS, UV 365 nm	1) dark reddish 2) orange red	icariin
	KP EPIMEDII HERBA	ethyl acetate / butanone / formic acid / water (10 : 1 : 1 : 1)	1) UV 365 nm 2) Aluminium chloride in ethanol, UV 365 nm	1) dark red 2) orange	icariin
	VP HERBA EPIMEDII				
18	<i>Evodia rutecarpa</i> Benthham	cyclohexane / ethyl acetate / methanol / trihexylamine (19 : 5 : 1 : 1)	10% sulfuric acid in ethanol		rutaecarpine
	CP FRUCTUS EVODIAE	hexane / ethyl acetate (3 : 2)	Dragendorff's TS		evodiamine
	KP EVODIAE FRUCTUS				
19	<i>Foeniculum vulgare</i> Millier	petroleum ether / ethyl acetate (17 : 2.5)	dinitrophenylhydrazine TS	orange-red	4-methoxybenzaldehyde
	CP FRUCTUS FOENICULI	hexane / ethyl acetate (20 : 1)	UV 254 nm	dark purple	
	JP FOENICULI FRUCTUS	hexane / ethyl acetate (20 : 1)		dark purple	
	KP FOENICULI FRUCTUS				
20	<i>Forsythia suspensa</i> Vahl	benzene / acetone / ethyl acetate / formic acid / water (20 : 25 : 30 : 3 : 3)	1) UV 365 nm 2) vanillin in sulfuric acid TS		
	CP FRUCTUS FORSYTHIAE	cyclohexane / chloroform / benzene / methanol (5 : 3 : 5 : 1)	5% ferric chloride in ethanol (acidified with HCl)		
	VP FRUCTUS FORSYTHIAE				
21	<i>Fritillaria verticillata</i> Willdenow var. <i>thunbergii</i> Baker	ethyl acetate / methanol / strong ammonia TS (17 : 2 : 1)	dilute potassium iodobismuthate TS		peimine, peiminine
	CP BULBUS FRITILLARIAE THUNBERGII	ethyl acetate / methanol / ammonia TS (17 : 2 : 1)	Dragendorff's TS	yellow-red	
	JP FRITILLARIAE BULBUS	ethyl acetate / methanol / concentrated ammonia solution (17 : 2 : 1)	Dragendorff's reagent		
	VP BULBUS FRITILLARIAE THUNBERGII				
22	<i>Gardenia jasminoides</i> Ellis	ethyl acetate / acetone / acetone / formic acid / water (5 : 5 : 1 : 1)	10% sulfuric acid in ethanol, 110°	dark purple	geniposide
	CP FRUCTUS GARDENIAE	ethyl acetate / methanol (3 : 1)	4-methoxybenzaldehyde-sulfuric acid TS, 105°, 10 min	dark purple	geniposide
	JP GARDENIAE FRUCTUS	ethyl acetate / methanol (3 : 1)	p-anisaldehyde-sulfuric acid TS, 105°, 10 min	dark purple	geniposide
	KP GARDENIAE FRUCTUS	ethyl acetate / methanol (3 : 1)	ethanol / sulphuric acid (5 : 1), 100°, 10 min		geniposide
	VP FRUCTUS GARDENIAE				
23	<i>Glycyrrhiza uralensis</i> Fisher, G. <i>glabra</i> Linne	ethyl acetate / formic acid / glacial acetic acid / water (15 : 1 : 1 : 2)	10% sulfuric acid in ethanol, 105°, UV 365 nm	yellow orange fluorescent	ammonium glycyrrhizinate
	CP RADIX ET RHIZOMA GLYCYRRHIZAE	1-butanol / water / acetic acid (100) (7 : 2 : 1)	UV 254 nm		glycyrrhizic acid
	JP GLYCYRRHIZAE RADIX	n-butanol / water / acetic acid (7 : 2 : 1)	UV 254 nm		glycyrrhetic acid
	KP GLYCYRRHIZAE RADIX	petroleum ether / benzene / ethyl acetate / glacial acetic acid (10 : 20 : 7 : 0.5)	10% phosphomolybdic acid in ethanol, 105°, 5 min		
	VP RADIX GLYCYRRHIZAE				
24	<i>Leonturus sibiricus</i> Linne.	n-butanol / hydrochloric acid / water (4 : 1 : 0.5)	dilute potassium iodobismuthate TS		stachydrine hydrochloride
	CP HERBA LEONTURI				
25	<i>Lonicera japonica</i> Thunberg	butyl acetate / formic acid / water (7 : 2.5 : 2.5)	UV 365 nm		chlorogenic acid
	CP FLOS LONICERAE JAPONICAE				
26	<i>Magnolia officinalis</i> Reihder et Wilson var. <i>biloba</i> Reihder et Wilson	benzene / methanol (27 : 1)	1% vanillin in sulfuric acid, 100°	yellow	magnolol, honokiol
	CP CORTEX MAGNOLIAE OFFICINALIS	1-butanol / water / acetic acid (100) (4 : 2 : 1)	Dragendorff's TS	yellow	
	JP MAGNOLIAE CORTEX	n-butanol / water / acetic acid (4 : 2 : 1)	Dragendorff's TS		
	KP MAGNOLIAE CORTEX	benzene / methanol (27 : 1)	1% vanillin in sulfuric acid, 100°, 10 min		magnolol, honokiol
	VP CORTEX MAGNOLIAE OFFICINALIS				
27	<i>Mentha arvensis</i> Linne var. <i>piperascens</i> Malinvaud	benzene / ethyl acetate (19 : 1)	vanillin in sulfuric acid TS / ethanol (1 : 4), 100°		menthol
	CP HERBA MENTHAE	ethyl acetate / toluene (5 : 95)	anisaldehyde solution, 100-105°, 5-10 min		menthol
	VP HERBA MENTHAE ARVENSIS				
28	<i>Morus alba</i> Linne	polyamide TLC, acetic acid	UV 365 nm		
	CP CORTEX MORI				
29	<i>Myrsine fragrans</i> Houttuyn	petroleum ether / benzene (1 : 1)	anisaldehyde TS, 105°, several min	yellow	
	CP SEMEN MYRSINICAE	chloroform / n-hexane (7 : 3)	expose the plate to iodine vapor		
	KP MYRSINICAE SEMEN	petroleum ether / benzene (1 : 1)	anisaldehyde solution, 105°, several min		
	VP SEMEN MYRSINICAE				
30	<i>Nelumbo nucifera</i> Gaertner	n-hexane / acetone (7 : 2)	5% vanillin in 10% sulfuric acid ethanol, 105°		
	CP SEMEN NELUMBINIS				
31	<i>Notopterygium incisum</i> Ting ex H. T. Chang, M. <i>forbesii</i> Boissieu	ODS TLC, methanol / water (9 : 1)	1) UV 365 nm 2) UV 254 nm		1) blueish white fluorescent 2) dark purple
	JP NOTOPTERYGIUM RHIZOMA				

No.	Latin name	TLC condition		(2) detection	(3) color tone on TLC	(4) marker compounds
		(1) developing solvent				
32	<i>Paeonia lactiflora</i> Pallas					
	CP RADIX PAEONIAE ALBA	chloroform / ethyl acetate / methanol / formic acid (40 : 5 : 10 : 0.2)		5% vanillin in sulfuric acid	bluish-purple	paeoniflorin
	JP PAEONIAE RADIX	acetone / ethyl acetate / acetic acid (100 : 10 : 10 : 1)		4-methoxybenzaldehyde-sulfuric acid TS, 105°, 5 min	purple-red	paeoniflorin
	KP PAEONIAE RADIX	acetone / ethyl acetate / glacial acetic acid (26 : 14 : 5)		p-anisaldehyde-sulfuric acid TS, 105°, 5 min	purple-red	paeoniflorin
	VP RADIX PAEONIAE	chloroform / ethyl acetate / methanol / formic acid (40 : 5 : 10 : 0.2)		5% vanillin in sulfuric acid		paeoniflorin
33	<i>Paeonia suffruticosa</i> Andrews					
	CP CORTEX MOUTAN	cyclohexane / ethyl acetate (3 : 1)		5% ferric chloride in ethanol (acidified with HCl)	bluish-brown	paeonol
	JP MOUTAN CORTEX	hexane / ethyl acetate (1 : 1)		UV 254 nm		paeonol
	KP MOUTAN CORTEX RADICIS	hexane / ethyl acetate (1 : 1)		UV 254 nm		paeonol
	VP CORTEX PAEONIA SUFFRUTICOSAE	cyclohexane / ethyl acetate (3 : 1)		5% ferric chloride in ethanol		paeonol
34	<i>Panax ginseng</i> C. A. Meyer					
	CP RADIX ET RHIZOMA GINSENG	chloroform / ethyl acetate / methanol / water (15 : 40 : 22 : 10)		1) 10% sulfuric acid in ethanol, 105°, 2) UV 365 nm	red-purple	ginsenoside Rb1, Re, Rf, Rg1
	JP GINSENG RADIX	chloroform / methanol / water (13 : 7 : 2)		dilute sulfuric acid, 110°, 5 min	red-purple	ginsenoside Rg1
	KP GINSENG RADIX ALBA	chloroform / methanol / water (13 : 7 : 2)		dilute sulfuric acid, 110°, 5 min	red-purple	ginsenoside Rg1
	VP RADIX GINSENG	chloroform / ethyl acetate / methanol / water (15 : 40 : 22 : 10)		10% sulfuric acid in ethanol (96%), 105°, several min, UV 365 nm		
35	<i>Platycodon grandiflorum</i> A. De Candolle					
	CP RADIX PLATYCODONIS	chloroform / ether (1 : 1)		10% sulfuric acid in ethanol, 105°		
36	<i>Pogostemon cablin</i> Bentham					
	CP HERBA POGOSTEMONIS	petroleum ether / ethyl acetate / glacial acetic acid (85 : 5 : 0.2)		5% ferric chloride in ethanol	purplish-blue	patchouli alcohol
	VP HERBA POGOSTEMONIS	benzene		1% vanillin in sulfuric acid, 120°		
37	<i>Prunella vulgaris</i> Linne var. <i>ilacina</i> Nakai					
	CP SPICA PRUNELLAE	cyclohexane / chloroform / ethyl acetate / glacial acetic acid (20 : 5 : 8 : 0.5)		10% sulfuric acid in ethanol, 100°, UV 365 nm		ursolic acid
	VP SPICA PRUNELLAE	cyclohexane / chloroform / ethyl acetate / glacial acetic acid (20 : 5 : 8 : 0.5)		10% sulfuric acid in ethanol, 100°, UV 366 nm		
38	<i>Prunus armeniaca</i> Linne, <i>P. armeniaca</i> Linne var. <i>ansu</i> Maximowicz					
	CP SEMEN ARMENIACAE AMARUM	chloroform / ethyl acetate / methanol / water (15 : 40 : 22 : 10)		phosphomolybdic acid in sulfuric acid, 105°		amygdalin
	JP ARMENIACAE SEMEN	ethyl acetate / methanol / water (7 : 3 : 1)		dilute sulfuric acid, 105°, 10 min	brown to dark green	
	KP ARMENIACAE SEMEN	ethyl acetate / methanol / water (7 : 3 : 1)		dilute sulfuric acid, 105°, 10 min	brown to dark brown	amygdalin
	VP SEMEN ARMENIACAE AMARUM	chloroform / ethyl acetate / methanol / water (15 : 40 : 22 : 10)		phosphomolybdic acid in sulfuric acid, 105°, 10 min		
39	<i>Prunus persica</i> Batsch, <i>P. persica</i> Batsch var. <i>davidiana</i> Maximowicz					
	JP PERSICAE SEMEN	ethyl acetate / methanol / water (7 : 3 : 1)		dilute sulfuric acid, 105°, 10 min	brown to dark green	
	KP PERSICAE SEMEN	ethyl acetate / methanol / water (7 : 3 : 1)		dilute sulfuric acid, 105°, 10 min	brown to dark brown	amygdalin
40	<i>Rheum palmatum</i> Linne					
	CP RADIX ET RHIZOMA RHEI	petroleum ether / ethyl formate / formic acid (15 : 5 : 1)		UV 365 nm	orange fluorescent	rhein
	JP RHEI RHIZOMA	ethyl acetate / 1-propanol / water / acetic acid (100) (40 : 40 : 30 : 1)		UV 365 nm	red fluorescent	senoside A
	KP RHEI RHIZOMA	ethyl acetate / 1-propanol / water / acetic acid (40 : 40 : 30 : 1)		UV 365 nm	red fluorescent	senoside A
	VP RHIZOMA RHEI	petroleum ether / ethyl formate / formic acid (75 : 25 : 1)		UV 365 nm	yellow fluorescent	emodin
41	<i>Schisandra chinensis</i> Bailon					
	CP FRUCTUS SCHISANDRAE CHINENSIS	petroleum ether / ethyl formate / formic acid (15 : 5 : 1)		UV 254 nm	blue-violet	deoxyschisandrin
	JP SCHISANDRAE FRUCTUS	hexane / ethyl acetate / acetic acid (100) (10 : 10 : 1)		UV 254 nm	bluish-purple	schisandrin
	KP SCHISANDRAE FRUCTUS	hexane / ethyl acetate / acetic acid (10 : 10 : 1)		UV 254 nm		schisandrin
	VP FRUCTUS SCHISANDRAE	petroleum ether / ethyl formate / formic acid (15 : 5 : 1)		UV 254 nm		
42	<i>Scutellaria baicalensis</i> Georgi					
	CP RADIX SCUTELLARIAE	toluene / ethyl acetate / methanol / formic acid (10 : 3 : 1 : 2)		UV 365 nm	dark-green	baicalin, baicalen
	JP SCUTELLARIAE RADIX	1-butanol / water / acetic acid (4 : 2 : 1)		iron (III) chloride hexahydrate in methanol (1 in 100)	dark-green	baicalin
	KP SCUTELLARIAE RADIX	chloroform / methanol / glacial acetic acid (20 : 10 : 3)		ferric chloride in methanol (1 in 100)	dark-green	baicalin
43	<i>Strychnos nux-vomica</i> Linne					
	CP SEMEN STRYCHNI	toluene / acetone / ethanol / concentrate ammonia (4 : 5 : 0.6 : 0.4)		potassium iodobismuthate	brucine	brucine
	VP SEMEN STRYCHNI	toluene / acetone / ethanol / concentrate ammonia (4 : 5 : 0.6 : 0.4)		Dragendorff reagent	strychnine, brucine	strychnine, brucine
44	<i>Syzgium aromaticum</i> Merrill et Perry					
	CP FLOS CARTOPHYLLI	petroleum ether / ethyl acetate (9 : 1)		5% vanillin in sulfuric acid, 105°	eugenol	eugenol
45	<i>Trichosanthes kirilowii</i> Maximowicz					
	CP RADIX TRICHOSANTHIS	n-butanol / absolute ethanol / glacial acetic acid / water (8 : 2 : 2 : 3)		ninhydrin TS, 105°	L-citrulline	L-citrulline
	VP RADIX TRICHOSANTHIS	n-butanol / absolute ethanol / glacial acetic acid / water (8 : 2 : 2 : 3)		ninhydrin in ethanol, 105°		
46	<i>Zingiber officinale</i> Roscoe					
	JP ZINGIBERIS RHIZOMA	ethyl acetate / hexane (1 : 1)		4-dimethylbenzaldehyde TS, 105°, 5 min	green	6-gingerol
	KP ZINGIBERIS RHIZOMA	hexane / acetone / glacial acetic acid (10 : 7 : 1)		2,4-dinitrophenylhydrazine TS, 105°, 10 min	brown	6-gingerol
	VP FRUCTUS JUJUBAE	toluene / ethyl acetate / glacial acetic acid (14 : 4 : 0.5)		10% sulfuric acid in ethanol		oleanolic acid

No.	Latin name	TLC condition	(1) developing solvent	(2) detection	(3) color tone on TLC	(4) marker compounds
48	<i>Zizyphus jujuba</i> Miller var. <i>spinosa</i> (Bunge) Hu ex H. F. Chou CP SEMEN ZIZIPHII SPINOSAE JP ZIZIPHII SEMEN		n-butanol saturated with water acetone / ethyl acetate / water / acetic acid (100) (10 : 10 : 3 : 1)	1% vanillin in sulfuric acid 1) UV 254 nm, 2) 1-naphthol-sulfuric acid TS, 105°, 5 min 10% phosphomolybdic acid in ethanol, 110°, 5 min	1) purple, 2) yellow-green to grayish green	jujuboside A, B
49	VP SEMEN ZIZIPHII MAURITIANAE Akebia quinata Decaisne, A. trifoliata Koidzumi		n-butanol saturated with water n-hexane / ethyl acetate / glacial acetic acid (6 : 4 : 0.25)	10% sulfuric acid in ethanol, 105°		oleanolic acid, hedragenin
50	Aloe ferax Miller CP ALOE JP ALOE		ethyl acetate / methanol / water (100 : 17 : 13) ethyl acetate / acetone / water / acetic acid (100) (20 : 5 : 2 : 2)	10% potassium hydroxide in methanol, UV 365 nm UV 365 nm	red fluorescent	aloin barbaloin
51	<i>Alpinia officinarum</i> Hance JP ALPINIAE OFFICINARI RHIZOMA		cyclohexane / ethyl acetate / acetic acid (100) (12 : 8 : 1)	UV 365 nm UV 365 nm	yellow-brown	
52	<i>Angelica pubescens</i> Maximowicz CP RADIX ANGELICAE PUBESCENTIS VP RADIX ANGELICAE PUBESCENTIS		n-hexane / benzene / ethyl acetate (2 : 1 : 1) benzene / ethyl acetate (9 : 1)	UV 365 nm UV 365 nm		
53	<i>Arctium lappa</i> Linne CP FRUCTUS ARCTII JP ARCTII FRUCTUS		chloroform / methanol / water (40 : 8 : 1) acetone / ethyl acetate / water (15 : 10 : 1)	10% sulfuric acid in ethanol, 105° dilute sulfuric acid, 105°, 5 min	red-purple	arctiin
54	<i>Areca catechu</i> Linne CP SEMEN ARECAE JP ARECAE SEMEN KP ARECAE SEMEN		cyclohexane / ethyl acetate / concentrated ammonia TS (7.5 : 7.5 : 0.2) acetone / water / acetic acid (100) (10 : 6 : 1) acetone / water / glacial acetic acid (10 : 6 : 1)	dilute potassium iodobismuthate TS Iodine TS Iodine TS	orange-red red-brown red-brown	arecoline hydrobromide arecoline hydrobromide
55	<i>Asterataricus</i> Linne fil. CP RADIX ET RHIZOMA ASTERIS 56 <i>Caesalpinia sappan</i> Linne		petroleum ether / ethyl acetate (9 : 1)	2, 4-dinitrophenylhydrazine TS	yellow	shionone
57	<i>Cassia argusifolia</i> Vahl, <i>C. acutifolia</i> Dellile CP LIGNUM SAPPAN 58 <i>Cassia obtusifolia</i> Linne, <i>C. tora</i> Linne		chloroform / acetone / formic acid (8 : 4 : 1) ethyl acetate / n-propanol / water (4 : 4 : 3)	12 min, under sunlight 20% nitroacetic acid, 120°, 10 min, 5% potassium hydroxide in dilute ethanol, UV 365 nm UV 365 nm UV 365 nm	red fluorescent red fluorescent	sennoside A sennoside A
59	<i>Chrysanthemum indicum</i> Linne CP FLOS CHRYSANTHEMI INDICI JP CHRYSANTHEMI FLOS VP FLOS CHRYSANTHEMI INDICI		petroleum ether / ethyl formate / formic acid (15 : 5 : 1) ethyl acetate / butanone / chloroform / formic acid / water (15 : 15 : 6 : 4 : 1) ethyl acetate / 2-butanone / water / formic acid (25 : 3 : 1 : 1) ethyl acetate / formic acid / water (8 : 1 : 1)	UV 365 nm UV 365 nm iron (III) chloride-methanol TS put in a chamber pre-saturated with the vapour of ammonia	orange fluorescent dark green 1) 4 brownish-yellow spots 2) 2 greenish-yellow spots	emodin, crysophanol buddleioside
60	<i>Citrus aurantium</i> Linne CP FRUCTUS AURANTII IMMATURUS VP FRUCTUS AURANTII IMMATURUS		n-butanol / acetic acid / water (4 : 1 : 5) methanol / acetone / chloroform / ammonia (3 : 4 : 13 : 0.5)	0.5% ninhydrin TS in ethanol, 105° 0.5% ninhydrin solution in ethanol, 105°, 10 min		synephrine synephrine
61	<i>Clematis chinensis</i> Osbeck, <i>C. manshurica</i> Ruprecht, <i>C. hexapetala</i> Pallas CP RADIX ET RHIZOMA CLEMATIDIS		toluene / ethyl acetate / formic acid (20 : 3 : 0.2)	10% sulfuric acid in ethanol, 105°		oleanolic acid
62	<i>Cnidium monnieri</i> Cusson CP FRUCTUS CNIDII JP CNIDII MONNIERI FRUCTUS VP FRUCTUS CNIDII		toluene / ethyl acetate / n-hexane (3 : 3 : 2) hexane / ethyl acetate (2 : 1) benzene / ethyl acetate (30 : 1)	UV 365 nm UV 365 nm UV 365 nm	blue-white	osthol osthol
63	<i>Crategeus pinnatifid</i> Bunge var. <i>major</i> N.E. Brown CP FRUCTUS CRATAEGI CP STIGMA CROCI		toluene / ethyl acetate / formic acid (20 : 4 : 0.5) ethyl acetate / methanol / water (100 : 16.5 : 13.5)	sulfuric acid / ethanol (3→10), 80°, UV 365 nm UV 365 nm	orange-yellow	ursolic acid
64	<i>Diospyros kaki</i> Thunberg 65 <i>Eriobotrya japonica</i> Lindley JP ERIBOTRYAE FOLIUM		toluene (saturated with water) / methyl formate / formic acid (5 : 4 : 1) ODS TLC, acetonitrile / water (2 : 3)	1% ferric chloride in ethanol dilute sulfuric acid, 105°, 10 min	red-purple	gallic acid
67	<i>Gentiana scabra</i> Bunge CP RADIX ET RHIZOMA GENTIANAE JP GENTIANAE SCABRAE RADIX KP GENTIANAE SCABRAE RADIX		ethyl acetate / methanol / water (20 : 2 : 1) ethyl acetate / ethanol (99.5) / water (8 : 2 : 1) chloroform / methanol / water (30 : 10 : 1)	UV 254 nm UV 254 nm UV 254 nm	dark purple dark purple	gentiopicrin gentiopicroside gentiopicroside

No.	Latin name	TLC condition (1) developing solvent	(2) detection	(3) color tone on TLC	(4) marker compounds
68	<i>Houttuynia cordata</i> Thunberg CP HERBA HOUTTUYNIAE	n-hexane / ethyl acetate (9 : 1)	dinitrophenylhydrazine TS	yellow	methylonylketone
69	<i>Lindera styracifolia</i> Fernabdez-Villar CP RADIX LINDERAE JP LINDERAE RADIX	toluene / ethyl acetate (15 : 1) ethyl acetate / methanol / ammonia water (28) (10 : 2 : 1)	1% vanillin in sulfuric acid Dragendorff's TS	yellow brown	linderane
70	<i>Lycium barbarum</i> Linne, <i>L. chinense</i> Miller CP FRUCTUS LYCII JP LYCII FRUCTUS	ethyl acetate / chloroform / formic acid (3 : 2 : 1) hexane / ethyl acetate (10 : 1)	UV 365 nm	yellow	
71	<i>Lycium chinense</i> Miller JP LYCII CORTEX	1-butanol / water / pyridine / acetic acid (100) (3 : 1 : 1 : 1)	Dragendorff's TS, 105*, 3 min	dark brown	
72	<i>Peucedanum praeruptorum</i> Dunn, <i>Angelica decursiva</i> Franchet et Savatier CP RADIX PEUCEDANI	petroleum ether / ethyl acetate (3 : 1)	UV 254 nm		praeruptorin A
73	<i>Pharbitis nil</i> Choisy CP SEMEN PHARBITIDS	chloroform / methanol / formic acid (100 : 9 : 4)	phosphomolybdic acid TS, 110°		caffeic acid, caffeoyl acetate
74	<i>Pheledendron amurense</i> Ruprecht, <i>P. chinense</i> Schneider CP CORTEX PHELLODENDRI AMURENSIS CP CORTEX PHELLODENDRI CHINENSIS	ethyl acetate / butanone / formic acid / water (10 : 6 : 1 : 1) ethyl acetate / butanone / formic acid / water (10 : 6 : 1 : 1)	UV 365 nm UV 365 nm		berberine hydrochloride berberine hydrochloride
75	<i>Piper nigrum</i> Linne CP FRUCTUS PIPERIS VP FRUCTUS PIPERIS NIGRI	1-butanol / water / acetic acid (100) (7 : 2 : 1) n-butanol / water / glacial acetic acid (7 : 2 : 1) benzene / ethyl acetate / acetone (7 : 2 : 1) benzene / ethyl acetate / acetone (7 : 2 : 1)	UV 365 nm UV 365 nm UV 365 nm	yellow to yellow-green yellow to yellow-green	berberine chloride berberine chloride berberine chloride
76	<i>Polygala tenuifolia</i> Willdenow CP RADIX POLYGALAE	toluene / ethyl acetate / formic acid (14 : 4 : 0.5)	10% sulfuric acid in ethanol, 105°		piperine
77	<i>Prunus mume</i> Siebold et Zuccarini CP FRUCTUS MUMIE	cyclohexane / chloroform / ethyl acetate / formic acid (20 : 5 : 8 : 0.1)	10% sulfuric acid in ethanol, 105°		ursolic acid
78	<i>Pueraria lobata</i> Ohwi CP RADIX PUERARIAE LOBATAE JP PUERARIAE RADIX KP PUERARIAE RADIX	chloroform / methanol / water (7 : 2.5 : 0.25) ethyl acetate / methanol / water (12 : 2 : 1) chloroform / methanol / water (6 : 4 : 1)	UV 365 nm UV 365 nm UV 365 nm	blue-white blueish white	puerarin puerarin puerarin
79	<i>Rehmannia glutinosa</i> Liboschitz CP RADIX REHMANNIAE VP RADIX REHMANNIAE GLUTINOSAE	chloroform / methanol / water (14 : 8 : 1) chloroform / methanol / water (70 : 30 : 5)	anisaldehyde TS, 105° anisaldehyde solution, 105*, 5 min		catalpol catalpol
80	<i>Salvia miltiorrhiza</i> Bunge CP RADIX ET RHIZOMA SALVIAE MILTIORRHIZAE CP SALVIAE MILTIORRHIZAE RADIX	toluene / chloroform / ethyl acetate / methanol / formic acid (2 : 3 : 4 : 0.5 : 2) hexane / ethyl acetate (4 : 1)	UV 254 nm 1) UV 254 nm, 2) sulfuric acid for spray		salvonic acid B tanshinone II A
81	<i>Saposhnikovia divaricata</i> Schischkin CP RADIX SAPHOSHIKOVIAE	chloroform / methanol (4 : 1)	UV 254 nm		prim-O-glucosylcimifugin, 5-O-methylsammimoside
82	<i>Saussurea lappa</i> Clarke CP RADIX AUCLANDIAE	chloroform / cyclohexane (5 : 1)	1% vanillin in sulfuric acid		detydrocostuslactone, costunolide
83	<i>Schizonepeta tenuifolia</i> Briquet CP SPICA SCHIZONEPETAE	petroleum ether / ethyl acetate (37 : 3)	1% vanillin in sulfuric acid		pulegone
84	<i>Scrophularia ningpoensis</i> Hemslley, <i>S. buergeriana</i> Miquel CP RADIX SCROPHULARIAE	n-butanol / glacial acetic acid / water (7 : 1 : 2)	vanillin TS in sulfuric acid		harpagide, harpagoside
85	<i>Sophora flavescens</i> Aiton CP RADIX SOPHORAE FLAVESCENS	benzene / acetone / methanol (8 : 3 : 0.5), toluene / ethyl acetate / methanol / water (2) potassium iodobismuthate TS, ethanolic sodium nitrate TS : 4 : 2 : 1		orange	oxymatrine
86	<i>Sophora japonica</i> Linne CP FLOS SOPHORAE	ethyl acetate / formic acid / water (8 : 1 : 1)	aluminum chloride TS, UV 365 nm		rutin
*	JP SOPHORAE FLOS KP SOPHORAE FLOS	chloroform / methanol / water (6 : 4 : 1) ethyl acetate / formic acid / water (8 : 1 : 1)	ammonia gas aluminum chloride TS, UV 365 nm	yellow	rutin
87	<i>Terminalia chebula</i> Retzius CP FRUCTUS CHEBULAE	chloroform / ethyl acetate / formic acid (8 : 4 : 1)	2% iron trichloride in ethanol		gallic acid
88	<i>Tribulus terrestris</i> Linne CP FRUCTUS TRIBULI JP TRIBULI FRUCTUS	chloroform / methanol / water (13 : 7 : 2) ethyl acetate / water (40 : 1)	modified <i>p</i> -dimethylaminobenzaldehyde TS, 105° dilute sulfuric acid, 105*, 5 min, UV 365 nm	blue-white fluorescent	
89	<i>Vitex trifolia</i> Linne CP FRUCTUS VITICIS	cyclohexane / ethyl acetate / methanol (3 : 2 : 0.2)	10% aluminum chloride		vitexicarpin

