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4.1.1. REAGENTS

(-)- α -Bisabolol. $C_{15}H_{26}O$. (M_r 222.4). **1128800.** [23089-26-1]. (2S)-6-Methyl-2-[(1S)-4-methylcyclohex-3-enyl]hept-5-en-2-ol. Levomenol.

Colourless, viscous liquid with a slight, characteristic odour, practically insoluble in water, freely soluble in ethanol (96 per cent), in methanol, in toluene, in fatty oils and in essential oils.

d_{20}^{20} : 0.925 to 0.935.

n_D^{20} : 1.492 to 1.500.

$[\alpha]_D^{20}$: -54.5 to -58.0, determined on a 50 mg/ml solution in ethanol (96 per cent) *R*.

(-)- α -Bisabolol used for gas chromatography complies with the following additional test.

Assay. Gas chromatography (2.2.28) as prescribed in the monograph on *Matricaria oil* (1836) using a 4 g/l solution in *cyclohexane R*.

Content: minimum 95.0 per cent, calculated by the normalisation procedure.

Butyl 4-hydroxybenzoate. **1103900.** [94-26-8].

See *Butyl parahydroxybenzoate R*.

Calcium phosphate monobasic monohydrate.

$Ca_4H_4O_8P_2H_2O$. (M_r 252.1). **1157200.** [7758-23-8]. Calcium tetrahydrogen bisphosphate monohydrate. Phosphoric acid calcium salt (2:1) monohydrate.

White or almost white, crystalline powder, soluble in water.

2-Chloronicotinic acid. $C_6H_4ClNO_2$. (M_r 157.6). **1157300.** [2942-59-8]. 2-Chloropyridine-3-carboxylic acid.

White or almost white powder.

mp: about 177 °C.

Content: minimum 95 per cent.

***o*-Coumaric acid.** $C_9H_8O_3$. (M_r 164.2). **1157400.** [614-60-8]. (*E*)-2-Hydroxycinnamic acid. (*2E*)-3-(2-Hydroxyphenyl)prop-2-enoic acid.

White or almost white powder.

mp: about 217 °C.

***p*-Coumaric acid.** $C_9H_8O_3$. (M_r 164.2). **1157500.** [7400-08-0]. 4-Hydroxycinnamic acid. 3-(4-Hydroxyphenyl)-prop-2-enoic acid.

White or almost white needles, practically insoluble in water, soluble in acetone and in methanol.

mp: 214 °C to 217 °C.

p-Coumaric acid used in the assay in *Nettle leaf* (1897) complies with the following additional requirements.

Loss on drying (2.2.32): maximum 5.0 per cent, determined on 0.200 g by drying in an oven at 100-105 °C for 2 h.

Assay. Liquid chromatography (2.2.29) as prescribed in the monograph on *Nettle leaf* (1897).

Content: minimum 95 per cent, calculated by the normalisation procedure.

Dipotassium hydrogen phosphate trihydrate.

$K_2HPO_4 \cdot 3H_2O$. (M_r 228.2). **1157600.** [16788-57-1].

Colourless or white or almost white powder or crystals, freely soluble in water.

2,2'-Dipyridylamine. $C_{10}H_9N_3$. (M_r 171.2). **1157700.** [1202-34-2]. *N*-(Pyridin-2-yl)pyridin-2-amine.

mp: about 95 °C.

Ethyl 4-hydroxybenzoate. **1035700.** [120-47-8].

See *Ethyl parahydroxybenzoate R*.

Ginsenoside Re. $C_{48}H_{82}O_{18}$. (M_r 947.2). **1157800.** [52286-59-6]. (3 β ,6 α ,12 β)-20-(β -D-Glucopyranosyloxy)-3,12-dihydroxydammar-24-en-6-yl 2-O-(6-deoxy- α -L-mannopyranosyl)- β -D-glucopyranoside.

Colourless solid, soluble in water, in ethanol (96 per cent) and in methanol.

L- γ -Glutamyl-L-cysteine. $C_8H_{14}N_2O_5S$. (M_r 250.3). **1157900.** [636-58-8].

L-Glutathione, oxidised. $C_{20}H_{32}N_6O_{12}S_2$. (M_r 612.6). **1158000.** [27025-41-8]. Bis(L- γ -glutamyl-L-cysteinylglycine) disulfide.

Hederacoside C. $C_{59}H_{96}O_{26}$. (M_r 1221). **1158100.** [27013-76-9]. O-6-Deoxy- α -L-mannopyranosyl-(1 \rightarrow 4)-O- β -D-glucopyranosyl-(1 \rightarrow 6)- β -D-glucopyranosyl (4R)-3 β -[[2-O-(6-deoxy- α -L-mannopyranosyl)- α -L-arabinopyranosyl]oxyl]-23-hydroxyolean-12-en-28-oate.

Colourless crystals or white or almost white powder. mp: about 220 °C.

Hederacoside C used in liquid chromatography complies with the following additional test.

Assay. Examine by liquid chromatography (2.2.29) as prescribed in the monograph on *Ivy leaf* (2148).

Test solution. Dissolve 5.0 mg of hederacoside C in 5.0 ml of *methanol R*.

Content: minimum 95 per cent, calculated by the normalisation procedure.

α -Hederin. $C_{41}H_{66}O_{12}$. (M_r 751.0). **1158200.** [27013-91-8]. (+)-*(4R*)-3 β -[[2-O-(6-Deoxy- α -L-mannopyranosyl)- α -L-arabinopyranosyl]oxyl]-23-hydroxyolean-12-en-28-oic acid.

White or almost white powder.

mp: about 256 °C.

Marrubiin. $C_{20}H_{28}O_4$. (M_r 332.4). **1158300.** [465-92-9]. (2aS,5aS,6R,7R,8aR,8bR)-6-[2-(Furan-3-yl)ethyl]-6-hydroxy-2a,5a,7-trimethyldecahydro-2H-naphtho[1,8-bc]furan-2-one. Colourless, microcrystalline powder.

Marrubiin used in liquid chromatography complies with the following additional test.

Assay. Liquid chromatography (2.2.29) as prescribed in the monograph on *White horehound* (1835).

Content: minimum 95.0 per cent, calculated by the normalisation procedure.

Mercuric nitrate. $Hg(NO_3)_2 \cdot H_2O$. (M_r 342.6). **1052400.** [7783-34-8]. Mercury dinitrate monohydrate.

Colourless or slightly coloured crystals, hygroscopic, soluble in water in the presence of a small quantity of nitric acid.

Storage: in an airtight container, protected from light.

Methyl 4-hydroxybenzoate. **1055000.** [99-76-3].

See *Methyl parahydroxybenzoate R*.

Methyl γ -linolenate. $C_{19}H_{32}O_2$. (M_r 292.5). **1158400.** [16326-32-2]. Methyl (6Z,9Z,12Z)-octadeca-6,9,12-trienoate.

Content: minimum 99.0 per cent of $C_{19}H_{32}O_2$, determined by gas chromatography.

Methyl nervonate. **1144800.** [2733-88-2].

See *Tetracos-15-enoic acid methyl ester R*.

Methylthymol blue. $C_{37}H_{40}N_2Na_4O_{13}S$. (M_r 845). **1158500.** [1945-77-3]. Tetrasodium 2,2',2'',2'''-[3H-2,1-benzoxathiol-3-ylidenebis[[6-hydroxy-2-methyl-5-(1-methylethyl)-3,1-phenylene]methylenenitrido]]tetraacetate S,S-dioxide.

Produces a blue colour with calcium in alkaline solution.

Methylthymol blue mixture. **1158501.**

A mixture of 1 part of *methylthymol blue R* and 100 parts of *potassium nitrate R*.

Nicotinic acid. **1158600.** [59-67-6].

See *Nicotinic acid (0459)*.

Scopoletin. $C_{10}H_8O_4$. (M_r 192.2). **1158700.** [92-61-5]. 7-Hydroxy-6-methoxy-2H-1-benzopyran-2-one.
7-Hydroxy-6-methoxycoumarin.

Faintly beige, fine crystals.

mp: 202 °C to 208 °C.

Sodium 2-hydroxybutyrate. $C_4H_7NaO_3$. (M_r 126.1). **1158800.** [19054-57-0]. Sodium (2RS)-2-hydroxybutanoate.

Thymidine. $C_{10}H_{14}N_2O_5$. (M_r 242.2). **1158900.** 1-(2-Deoxy- β -D-*erythro*-pentofuranosyl)-5-methylpyrimidine-2,4(1H,3H)-dione.

Needles, soluble in water, in hot ethanol (96 per cent) and in glacial acetic acid.

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4.1.2. STANDARD SOLUTIONS FOR LIMIT TESTS

Barium standard solution (0.1 per cent Ba). **5000601.**

Dissolve *barium chloride R* equivalent to 0.178 g of $BaCl_2 \cdot 2H_2O$ in *distilled water R* and dilute to 100.0 ml with the same solvent.

Magnesium standard solution (0.1 per cent Mg). **5001803.**

Dissolve *magnesium sulphate R* equivalent to 1.010 g of $MgSO_4 \cdot 7H_2O$ in *distilled water R* and dilute to 100.0 ml with the same solvent.

Potassium standard solution (0.2 per cent K). **5002402.**

Dissolve *dipotassium sulphate R* equivalent to 0.446 g of K_2SO_4 in *distilled water R* and dilute to 100.0 ml with the same solvent.