

Homoeopathy. Kava has been used in homoeopathic medicines under the following names: Piper methysticum; Piper. m.

◇ References.

1. Anonymous. Kava. *Lancet* 1988; **ii**: 258–9.
2. Anonymous. Tonga trouble. *Pharm J* 1990; **245**: 288.
3. Ruze P. Kava-induced dermatopathy: a niacin deficiency? *Lancet* 1990; **335**: 1442–5.
4. Schelosky L, et al. Kava and dopamine antagonism. *J Neurol Neurosurg Psychiatry* 1995; **58**: 639–40.
5. Spillane PK, et al. Neurological manifestations of kava intoxication. *Med J Aust* 1997; **167**: 172–3.
6. Pepping J. Kava: piper methysticum. *Am J Health-Syst Pharm* 1999; **56**: 957–60.
7. Anonymous. Kava extract linked to hepatitis. *WHO Drug Inf* 2000; **14**: 98.
8. Escher M, et al. Hepatitis associated with kava, a herbal remedy for anxiety. *BMJ* 2001; **322**: 139.
9. Anonymous. Hepatic toxicity possibly associated with kava-containing products—United States, Germany, and Switzerland, 1999–2002. *MMWR* 2002; **51**: 1065–7. Also available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5147a1.htm> (accessed 15/07/04)
10. Stieckel F, et al. Hepatitis induced by Kava (Piper methysticum rhizoma). *J Hepatol* 2003; **39**: 62–7.
11. Clouatre DL. Kava kava: examining new reports of toxicity. *Toxicol Lett* 2004; **150**: 85–96.
12. Anke J, Ramzan I. Pharmacokinetic and pharmacodynamic drug interactions with Kava (Piper methysticum Forst. f.). *J Ethnopharmacol* 2004; **93**: 153–60.
13. Perez J, Holmes JF. Altered mental status and ataxia secondary to acute Kava ingestion. *J Emerg Med* 2005; **28**: 49–51.
14. Ulbricht C, et al. Safety review of kava (Piper methysticum) by the Natural Standard Research Collaboration. *Expert Opin Drug Saf* 2005; **4**: 779–94.

Preparations

Proprietary Preparations (details are given in Part 3)

Braz.: Ansiopax†; Calmiton†; Calmonex; Farnakava†; Kavakan; Kavalac†; Kavamed; Kavasedon†; Laitan; Natuzilium†; **Chile:** Laikan 100†; **Cz.:** Antares†; Kavasedon†; Leikan†; **Ger.:** Aigin†; Ardeydystin†; Eukavan†; Ka-Sabona†; Kava-Phyton†; Kavain Haras N†; Kavasedon†; Kavosporal forte†; Laitan†; Maon†; Nervonoclon N†; Neuronika†; **Mex.:** Laiken; **Switz.:** Kavasedon†; **Venez.:** Kavasedon†.

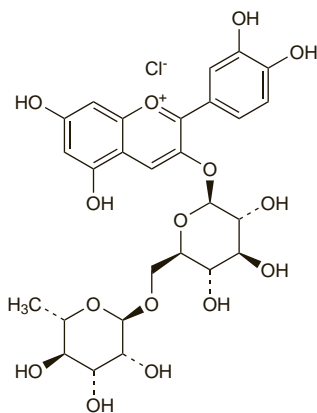
Multi-ingredient: **Ger.:** Bilicura Forte†; Hewepsychon duo†; Hyposedon N†; Kavosporal comp†; Somnuvis S†; **Ital.:** Controller; **Switz.:** Kawaforn†; Yakona N†.

Keracyanin (rINN)

Cyaninoid; Keracianina; Kéracyanine; Keracyaninum. 3-[6-O-(6-Deoxy- α -L-mannopyranosyl)- β -D-glucopyranosyloxy]-3',4',5,7-tetrahydroxyflavylium chloride.

Керацианин

$C_{27}H_{31}ClO_{15}$ = 631.0.
CAS — 18719-76-1.



Profile

Keracyanin is claimed to improve visual function in poor light conditions and has been given orally in vision disorders.

Preparations

Proprietary Preparations (details are given in Part 3)

Ital.: Meralopt†; **Spain:** Meralopt†.

Keratinase

Queratinasa.

CAS — 9025-41-6.

Profile

Keratinase is a proteolytic enzyme that has been obtained from cultures of *Streptomyces fradiae*. It can digest keratin, which is resistant to most proteolytic enzymes, in the presence of trace amounts of metal ions. It is used in the commercial separation of hair from animal hides, and has been tried as a depilatory; it has also been included in some topical antibacterial ointments, presumably to aid penetration of the active substances.

Kinkeliba

Combreti Folium; Kinkéliba.

Pharmacopeias. In *Fr.*

Profile

Kinkeliba is the dried leaves of *Combretum micranthum* (*C. alatum*; *C. raimbaultii*) (Combretaceae), a shrub indigenous to West Africa. It has been used as an ingredient of herbal remedies given for the treatment of biliary, liver, and gastrointestinal disorders. Other species of *Combretum* are also used.

Homoeopathy. Kinkeliba has been used in homoeopathic medicines.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: **Fr.:** Hepaclem; Hepax; Jecopeptol; Mediflor Tisane Hepatique No 5; Romarene; Solution Stago Diluee. **Mon.:** Romarinex; **Switz.:** Bilifuge.

Klebsiella Pneumoniae Glycoprotein

Glucoproteina de Klebsiella pneumoniae; RU-41740.

Profile

Klebsiella pneumoniae glycoprotein is an immunostimulant that has been used in the management of respiratory-tract infections, wounds, and burns.

Preparations

Proprietary Preparations (details are given in Part 3)

Braz.: Biostim; **Cz.:** Biostim†; **Fr.:** Biostim†; **Ital.:** Acintor; Biostim; **Mex.:** Biostim; **Port.:** Biostim†.

Knotgrass

Knoutweed; Nat' rdesna ptačicho; Pihatatar; Polygoni avicularis herba; Renouée des oiseaux; Takažolij žolje; Trampgräs; Vogelknöterichkraut; Ziele rdestu ptasiego.

Pharmacopeias. In *Chin.* and *Eur.* (see p.vii).

Ph. Eur. 6.2 (Knotgrass; Polygoni Avicularis Herba). It consists of the whole or cut, dried aerial parts of *Polygonum aviculare*. It contains not less than 0.3% of flavonoids, expressed as hyperoside ($C_{21}H_{20}O_{12}$ = 464.4) calculated with reference to the dried drug. Protect from light.

Profile

Knotgrass, *Polygonum aviculare* (*P. heterophyllum*) (Polygonaceae), is included in herbal preparations for mild catarrh and associated upper respiratory-tract disorders.

Homoeopathy. Knotgrass has been used in homoeopathic medicines under the following names: Polygonum aviculare.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: **Cz.:** Pulmoran; Species Urologicae Planta; **Pol.:** Cholesot; Reumosol.

Krebiozen

Crebiocién.

Кребиозен

CAS — 9008-19-9.

Profile

Krebiozen is the name of a preparation that was formerly promoted as a 'cancer cure' in the USA, but totally discredited by the FDA. It was stated to be obtained from the blood of horses previously injected with an extract of *Actinomyces bovis*.

Kveim Antigen

Antígeno de Kveim.

Profile

Kveim antigen is a fine suspension in physiological saline of sarcoid tissue prepared from spleens taken from patients with active sarcoidosis. It is used as an intradermal injection in the Kveim (Kveim-Siltzbach) test for the diagnosis of sarcoidosis (p.1512).

◇ References.

1. James DG, Williams WJ. Kveim-Siltzbach test revisited. *Sarcoidosis* 1991; **8**: 6–9.

◇ The safety of the Kveim test has been questioned, particularly with reference to the risk of transmission of sarcoidosis, and of hepatitis B, HIV, and Creutzfeldt-Jakob disease.¹ However, the procedure to identify acceptable sarcoid spleens and the method of preparation were considered sufficient to reduce the risk of transmission of infections² and of Creutzfeldt-Jakob disease.³

1. Wigly RD. Moratorium on Kveim tests. *Lancet* 1993; **341**: 1284.
2. du Bois RM, et al. Moratorium on Kveim tests. *Lancet* 1993; **342**: 173.
3. de Silva RN, Will RG. Moratorium on Kveim tests. *Lancet* 1993; **342**: 173.

Laburnum

Golden Chain; Golden Rain; Lluvia de oro.

Profile

All parts of laburnum, *Laburnum anagyroides* (*L. vulgare*; *Cytisus laburnum*) (Leguminosae), are toxic. The toxic principle is cytisine (p.2291) which has actions similar to nicotine.

Lactic Acid

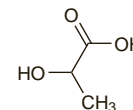
Acide lactique; Acidum lacticum; E270; E326 (potassium lactate); Kwas mlekowy; Kyselina mléčná; Láctico, ácido; Laktik Asit; Maitohappo; Milchsäure; Mjölksyra; Pieno rūgštis; Tejsav. 2-Hydroxypropionic acid; 2-Hydroxypropanoic acid.

$C_3H_5O_3$ = 90.08.

CAS — 50-21-5; 79-33-4 ((+)-lactic acid); 10326-41-7 ((-)-lactic acid); 598-82-3 ((±)-lactic acid).

ATC — G01AD01.

ATC Vet — QG01AD01; QP53AG02.



Pharmacopeias. In *Chin.*, *Int.*, *Jpn.* and *US*.

Eur. (see p.vii) includes monographs for the racemate and the (S)-enantiomer.

Ph. Eur. 6.2 (Lactic Acid). A mixture of lactic acid, its condensation products, such as lactoyl-lactic acid and other poly-lactic acids, and water. The equilibrium between lactic acid and poly-lactic acids depends on the concentration and temperature. It is usually the racemate (*RS*-lactic acid), and contains the equivalent of 88 to 92% w/w of $C_3H_5O_3$. A colourless or slightly yellow, syrupy liquid. Miscible with water and with alcohol.

Ph. Eur. 6.2 ((S)-Lactic Acid). A mixture of (S)-lactic acid, its condensation products, such as lactoyl-lactic acid and other poly-lactic acids, and water. The equilibrium between lactic acid and poly-lactic acids depends on the concentration and temperature. It contains the equivalent of 88 to 92% w/w of $C_3H_5O_3$, of which not less than 95% is the (S)-enantiomer. A colourless or slightly yellow, syrupy liquid. Miscible with water and with alcohol.

USP 31 (Lactic Acid). A mixture of lactic acid and lactic acid lactate equivalent to a total of 88 to 92% w/w of $C_3H_5O_3$. It is obtained by the lactic fermentation of sugars or is prepared synthetically. Lactic acid obtained by fermentation of sugars is laevorotatory, while that prepared synthetically is racemic.

A colourless or yellowish, hygroscopic, practically odourless, syrupy liquid. When it is concentrated by boiling, lactic acid lactate is formed. Miscible with water, with alcohol, and with ether; insoluble in chloroform. Store in airtight containers.

Adverse Effects and Treatment

As for Hydrochloric Acid, p.2322, although in the concentrations used it is less corrosive.

Neonates. There was evidence that neonates had difficulty in metabolising *R*(-)-lactic acid and this isomer and the racemate should not be used in foods for infants less than 3 months old.¹

1. FAO/WHO. Toxicological evaluation of certain food additives with a review of general principles and of specifications: seventeenth report of the joint FAO/WHO expert committee on food additives. *WHO Tech Rep Ser* 539 1974.

Uses and Administration

Lactic acid has actions similar to those of acetic acid (p.2244) and has been used similarly in the treatment of infective skin and vaginal disorders. It has been used in the preparation of lactate injections and infusions to provide a source of bicarbonate for the treatment of metabolic acidosis (for the problems of using lactate in metabolic acidosis, see p.1667). It is also applied topically in the treatment of warts (p.1584), often with salicylic acid, and in emollient creams. Other uses include the treatment of severe aphthous stomatitis in terminally ill, immunocompromised patients.

Lactic acid has also been used as a food preservative and as an ingredient of cosmetics.

Preparations

BP 2008: Lactic Acid Pessaries;

USP 31: Compound Cloquinol Topical Powder.

Proprietary Preparations (details are given in Part 3)

Arg.: Celucrem†; **Austria:** Espiritin; Warzin; **Belg.:** Lacta-Gynecogel; **Braz.:** Verrux; **Canada:** Dermalac; Lubriderm AHA†; Penederm†; **Chile:** Eucerin; **Fr.:** Ictyoderm†; Lactacyd Femina; **Ger.:** Lactisan; Lactisol; RMS†; **Irl.:** Relact; **Ital.:** Saugella; Intilac; Ungyn; **Malaysia:** Avecyde†; **Mex.:** Acid-Lac; Avecyde; Eucerin Piel con Tendencia Acneica†; Lactibon; **NZ:** BK†; **Philipp.:** Lactacyd VG; **Pol.:** Keratolysin; **Port.:** Atopic†; **Singapore:** Avecyde†; **Spain:** Keratidin; **Swed.:** Calmuri†; **Switz.:** Vagoclyss; **USA:** Lactinol; Lactrex; **Venez.:** Dermalact; Jabolac†; Lactibon.

Multi-ingredient: **Arg.:** Acilac; Akerat; Callicida; Caminol†; Cellskinlab C + AHA; Coltix†; Controlacne; Democridin; Duofilm; Hidrolac; Keracnyl; Lacticare; Muvar; Nutrafilim; Opoentrol†; Oxidermos; Pasem; Ureadin Facial; Verruclean; Verrutopic; **Austral.:** Aussie Tan Skin Moisturiser; Calmurid; Comkilt†; Dermadrate; Dermatech Wart Treatment; Duofilm; **Austria:** Calmurid; Calmurid HC; Duofilm; Helo-acid; Hylak; Hylak Forte; Lavagin; **Belg.:** Aporil; Calmurid†; **Braz.:** Calope†; Calotrat†; Colpolase;