Corbadrine *(rINN)* ⊗

Corbadrina; Corbadrinum; *l*-3,4-Dihydroxynorephedrine; Levonordefrin; *l*-Nordefrin. (–)-2-Amino-1-(3,4-dihydroxyphenyl)propan-1-ol.

Корбадрин

$C_9H_{13}NO_3$ = 183.2.

CAS — 829-74-3 (corbadrine); 6539-57-7 (nordefrin); 61-96-1 (nordefrin hydrochloride).

Pharmacopoeias. In *US*.

USP 31 (Levonordefrin). A white to buff-coloured, odourless, crystalline solid. Practically insoluble in water; slightly soluble in alcohol, in acetone, in chloroform, and in ether; freely soluble in aqueous solutions of mineral acids.

Profile

Corbadrine is a sympathomimetic (p.1407) that has been added to local anaesthetic preparations in dentistry to diminish absorption and to localise the effect; a concentration of 1 in 20 000 has been used.

Preparations

USP 31: Mepivacaine Hydrochloride and Levonordefrin Injection; Procaine and Tetracaine Hydrochlorides and Levonordefrin Injection; Propoxycaine and Procaine Hydrochlorides and Levonordefrin Injection.

Proprietary Preparations (details are given in Part 3)

Used as an adjunct in: ***Canad.:*** Polocaine†; ***USA:*** Carbocaine with Neo-Cobefrin; Isocaine; Polocaine.

Coriander

Coentro; Coriand.; Coriander Fruit; Coriander Seed; Coriandre; Coriandri fructus; Fruto del cilantro; Kalendrų vaisiai; Koriander; Koriandertermés; Koriandrový plod; Korianteri; Owoc kolendry.

Pharmacopoeias. In *Eur.* (see p.vii).

Ph. Eur. 6.2 (Coriander). The dried cremocarp of *Coriandrum sativum*, containing not less than 0.3% v/w of essential oil, calculated with reference to the dried substance. Protect from light. The BP 2008 directs that when Powdered Coriander is prescribed or demanded material containing not less than 0.2% v/w of essential oil shall be dispensed or supplied.

Profile

Coriander is the source of coriander oil (below). It is a carminative and is used as a flavour.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: ***Arg.:*** Salutaris; ***Austria:*** Brady's-Magentropfen; Mariazeller; Planta Lax; ***Braz.:*** Fitolax; Florlax; Fontolax; Frutalax†; Laxarine†; Laxtam; Naturetti; Sene Composta†; Tamaril; Tamarine; Tamarix†; ***Cz.:*** Abfuhr-Heilkräutertee†; Carminativum Babynos†; Hertz- und Kreislauftee†; ***Fr.:*** Mediflor Tisane Digestive No 3; ***Ger.:*** Carminativum Babynos†; Floradix Multipretten N; Gastrol S†; Presselin Dyspeptikum†; Ramend Krauter†; ***Ital.:*** Cadifen; Cadimint; Dicalmir; Tamarine; ***Mex.:*** Naturetti†; ***Pol.:*** Cholesol; Diges-Tonic; ***S.Afr.:*** Melissengeist; Spiritus Contra Tussim Drops; ***Spain:*** Agua del Carmen; Jarabe Manceau; Pruina; ***Switz.:*** Alcoolat de Melisse†; ***UK:*** Melissa Comp..

Coriander Oil

Cilantro, aceite esencial de; Coriandre, huile essentielle de; Coriandri aetheroleum; Coriandri Etheroleum; Kalendrų eterinis aliejus; Korianderolja; Koriandrová silice; Korianteriöljy; Ol. Coriand; Oleum Coriandri.

Pharmacopoeias. In *Eur.* (see p.vii). Also in *USNF*.

Ph. Eur. 6.2 (Coriander Oil). An essential oil obtained by steam distillation from the fruits of *Coriandrum sativum*. A clear colourless or pale yellow liquid, with the characteristic spicy odour. It contains not less than 65% and not more than 78% of linalol. Relative density 0.860 to 0.880. Store in well-filled airtight containers at a temperature not exceeding 25°. Protect from light.

USNF 26 (Coriander Oil). The volatile oil obtained by steam distillation from coriander. Specific gravity 0.863 to 0.875. Soluble 1 in 3 of alcohol (70%). Store in airtight containers at a temperature not exceeding 40°. Protect from light.

Profile

Coriander oil is aromatic and carminative and is used as a flavour.

Preparations

BP 2008: Compound Orange Spirit; Compound Rhubarb Tincture; ***USNF 26:*** Compound Orange Spirit.

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: ***Ger.:*** Floradix Multipretten N; Gastricard†; Gastrysat; ***Ital.:*** Valda Propoli; ***Pol.:*** Argol Essenza Balsamica; Argol Grip; Argol Rheuma; ***Rus.:*** Espol (Эспол).

Corn Silk

Maíz, barba del; Stigma Maydis; Zea.

Pharmacopoeias. In *Fr.*

Profile

Corn silk, the stigma and style of maize (*Zea mays*) (Gramineae), has diuretic properties and is used for urinary-tract disorders including renal calculi.

Maize is widely used as a food and has also been used in herbal medicine.

Preparations

Proprietary Preparations (details are given in Part 3)

Fr.: Insadol; ***Switz.:*** Insadol; ***UK:*** Protat.

Multi-ingredient: ***Austral.:*** Althaea Complex; Urinase†; ***Pol.:*** Neopoldanen; ***Spain:*** Diurinat; Renusor†; ***UK:*** Elixir Damiana and Saw Palmetto.

Cottonseed Oil

Algodón, aceite de; Bomullsfröolja; Coton, huile de; Cotton Oil; Gossypii oleum; Gossypii Oleum Latin; Gyapotmagolaj; Ol. Gossyp. Sem.; Oléo de Algodoeiro; Oleum Gossypii Seminis; Puuvillansiemenöljy; Vilnamedžių aliejus.

CAS — 8001-29-4.

Pharmacopoeias. In *USNF*, which also includes hydrogenated cottonseed oil.

Eur. (see p.vii) includes only the hydrogenated oil.

Ph. Eur. 6.2 (Cottonseed Oil, Hydrogenated; Gossypii Oleum Hydrogenatum). Obtained by refining and hydrogenation of oil obtained from seeds of cultivated plants of various varieties of *Gossypium hirsutum* or of other species of *Gossypium*. It consists mainly of triglycerides of palmitic and stearic acids. It is a white or almost white mass or powder which melts to a clear pale yellow liquid when heated. M.p. 57° to 70°. Practically insoluble in water; very slightly soluble in alcohol; freely soluble in dichloromethane and in toluene. Protect from light.

USNF 26 (Cottonseed Oil). The refined fixed oil obtained from the seed of plants of various varieties of *Gossypium hirsutum* or of other species of *Gossypium* (Malvaceae). It is a pale yellow, oily liquid, odourless or nearly so. Slightly soluble in alcohol; miscible with carbon disulfide, with chloroform, with ether, and with petroleum spirit. Store in airtight containers at a temperature not exceeding 40°. Protect from light. At temperatures below 10° particles of solid fat may separate from the oil and at about 0° to –5° the oil becomes a solid or nearly so.

USNF 26 (Hydrogenated Cottonseed Oil). It is obtained by hydrogenating Cottonseed Oil and consists mainly of triglycerides of palmitic and stearic acids. A white mass or powder that melts to a clear, pale yellow liquid when heated. M.p. 57° to 70°. Practically insoluble in water; very slightly soluble in alcohol; freely soluble in dichloromethane and in toluene. Store in airtight containers. Protect from light.

Profile

Cottonseed oil is used as an oily vehicle.

An extract of cottonseed oil, gossypol (p.2316), has been tried as a contraceptive in males.

Couch-grass

Agropyron; Chiendent; Chiendent, rhizome de; Dogs Grass; Grama; Graminis rhizoma; Juolavehnänjuurakko; Kłącze perzu; Kvickrot; Pýrový oddenek; Quackgrass; Tarackbúza-gyökértörzs; Triticum; Twitch; Varpučių šakniastiebiai.

Пырей Ползучий

NOTE. Distinguish from Wheat, *Triticum aestivum* (see p.2415).

Pharmacopoeias. In *Eur.* (see p.vii).

Ph. Eur. 6.2 (Couch Grass Rhizome). The whole or cut, washed and dried rhizome of *Agropyron repens* (*Elymus repens*); the adventitious roots are removed. Protect from light.

Profile

Couch-grass is a mild diuretic that has been used in herbal medicine in the treatment of urinary-tract disorders. It contains glucose, mannitol, inositol, and triticin (a carbohydrate resembling inulin). The Latin binomials *Elytrigia repens* and *Triticum repens* have also been applied to couch-grass.

Preparations

Proprietary Preparations (details are given in Part 3)

Ger.: Acorus.

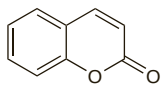
Multi-ingredient: ***Austria:*** Abfuhrtee†; ***Fr.:*** Drainuryl; Herbesan; Mediflor Tisane Antirhumatismale No 2; Mediflor Tisane No 4 Diuretique; Obeflorine; Tisane Hepatique de Hoerdt; ***Ger.:*** Hevert-Blasen-Nieren-Tee N; Presselin Stoffwechsel-Tee Hapeka 225 N†; Renob Blasen- und Nierentee; ***Ital.:*** Betulla (Specie Composta)†; Emmenoiasi; Gramigna (Specie Composta)†; Tisana Kelemata; ***Pol.:*** Dentosept; Diabetofort; Diabetosol; Laxantol; NeoFitolizyna; ***Spain:*** Diurinat; Renusor†; ***UK:*** Antitis; Kas-Bah.

Coumarin

1,2-Benzopyrone; 5,6-Benzo-α-pyrone; Cumarin; Cumarina; Kumaryna; Tonka Bean Camphor. 2*H*-1-Benzopyran-2-one.

$C_9H_6O_2$ = 146.1.

CAS — 91-64-5.



Pharmacopoeias. In *Ger.*

Profile

Coumarin is the odorous principle of Tonka seed (Tonka or Tonquin bean); it may be prepared synthetically. Coumarin has been given to reduce excess tissue protein and associated fluid in the treatment of lymphoedema (see below). It has also been used as a fixative in perfumery and as a flavour. It is reported to be an immunostimulant and has been tried in the treatment of malignant neoplasms.

Coumarin derivatives are used as anticoagulants; coumarin itself is not an active anticoagulant.

Effects on the liver. Coumarin has been classified as hepatotoxic based on studies in *animals* and effects ranging from elevated liver enzymes to serious organ damage has been reported in humans. Seventeen of 2173 patients enrolled in a study of coumarin developed elevated liver enzyme values;[1] the majority of patients were given 100 mg coumarin daily for 1 month followed by 50 mg daily for 2 years. However, none of the patients developed permanent liver damage and liver enzyme values returned to normal in 5 patients who continued taking coumarin. Results from 5 studies supported by the Lymphoedema Association of Australia, in which patients received 400 mg daily for a mean duration of 14.6 months, showed 2 cases of hepatotoxicity among 1106 patients.[2] In the period of 14 months up to May 1995, the Australian Drug Evaluation Committee received 10 reports of suspected adverse reactions to coumarin,[3] including 6 cases of jaundice in women who had taken 400 mg daily for 1 to 4 months. Periportal and lobular necrosis were found on biopsy in 1 case and another had a fatal outcome due to massive hepatic necrosis.

Reports of hepatotoxicity have led to the withdrawal of coumarin in a number of countries.

1. Cox D, *et al.* The rarity of liver toxicity in patients treated with coumarin (1,2-benzopyrone). *Hum Toxicol* 1989; **8:** 501–6.
2. Casley-Smith JR, Casley-Smith JR. Frequency of coumarin hepatotoxicity. *Med J Aust* 1995; **162:** 391.
3. Anonymous. Lodema and the liver. *Aust Adverse Drug React Bull* 1995; **14:** 11. Also available at: http://www.tga.gov.au/adr/aadrb/aadr9508.htm (accessed 30/07/08)

Lymphoedema. Benzopyrones such as coumarin are reported to reduce excess protein in tissues with high-protein oedema, hence the use of coumarin in lymphoedema of various causes, including postmastectomy, and filarial lymphoedema and elephantiasis.[1-5] Evidence for its efficacy is, however, conflicting;[4-6] at best the action is slow and treatment may need to be given for 6 months to 2 years before any benefit is seen.

1. Jamal S, *et al.* The effects of 5,6 benzo-[a]-pyrone (coumarin) and DEC on filaritic lymphoedema and elephantiasis in India: preliminary results. *Ann Trop Med Parasitol* 1989; **83:** 287–90.
2. Turner CS. Congenital lymphedema. *JAMA* 1990; **264:** 518.
3. Casley-Smith JR, *et al.* Treatment of lymphedema of the arms and legs with 5,6-benzo-[α]-pyrone. *N Engl J Med* 1993; **329:** 1158–63.
4. Casley-Smith JR, *et al.* Treatment of filarial lymphoedema and elephantiasis with 5,6-benzo-α-pyrone (coumarin). *BMJ* 1993; **307:** 1037–41.
5. Casley-Smith JR. Benzo-pyrones in the treatment of lymphoedema. *Int Angiol* 1999; **18:** 31–41.
6. Loprinzi CL, *et al.* Lack of effect of coumarin in women with lymphedema after treatment for breast cancer. *N Engl J Med* 1999; **340:** 346–50.

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Esberiven; ***Ger.:*** Venalot mono†; ***Ital.:*** Linfovenodren.

Multi-ingredient: ***Arg.:*** Esberiven; Microsuy; ***Braz.:*** Flebotrat†; Micotox†; Varicoss; Venalot; Venalot H; ***Ger.:*** Caye Rheuma-Balsam; Venalot; Venalot N†; ***Ital.:*** Flebolider; ***Mex.:*** Venalot.

Coutarea Latiflora

Copalchi.

NOTE. The name copalchi has also been applied to *Croton niveus* (Euphorbiaceae).

Profile

Coutarea latiflora is an ingredient of herbal remedies used in the management of diabetes mellitus. For a report of hepatotoxicity associated with a preparation containing *Coutarea latiflora* see Centaury, p.2279.

Adverse effects. Rhabdomyolysis and haemolysis occurred in a 58-year-old man 2 days after starting treatment with *Coutarea latiflora*.[1] The patient had a similar reaction 4 years earlier after taking the same product.

1. Roca B. Rhabdomyolysis and hemolysis after use of Coutarea latiflora. *Am J Med* 2003; **115:** 677.

Preparations

Proprietary Preparations (details are given in Part 3)

Ger.: Sucontral.

Cowberry

Alpine Cranberry; Arándano rojo; Liść brusznicy (leaf); Red Whortleberry; Vitis Idaeae Folium (leaf).

Pharmacopoeias. In *Pol.*