

Preparations

Proprietary Preparations (details are given in Part 3)
Gr.: Polimod; **Ital.:** Onaka; Pigtil; Polimod; **Mex.:** Adimod.

Pilewort

Celidonia menor; Ficaire; Ficaria Ranunculoides; Ficaria Verna; Lesser Celandine.

Pharmacopoeias. In *Fr.*

Profile

Pilewort, the aerial parts of *Ranunculus ficaria* (Ranunculaceae), has astringent and demulcent properties and is used topically for the treatment of haemorrhoids.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: **Arg.:** Confortel†; **Cz.:** Avenoc; **Fr.:** Apaisance; Hemorroge†; **UK:** Piletabs.

Pinaverium Bromide (HNN)

Bromuro de pinaverio; Pinaverii Bromidum; Pinavérium, Bromure de; Pinaveriumbromid; Pinaveriumbromidi; Pinaveryum Bromür; 4-(6-Bromoveratryl)-4-[2-[2-(6,6-dimethyl-2-norpinyl)ethoxy]ethyl]morpholinium bromide.

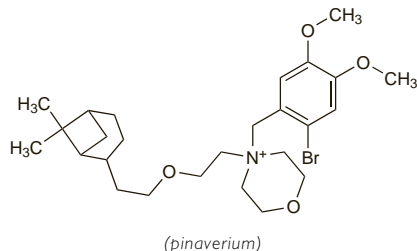
Пинаверия Бромид

$C_{26}H_{41}Br_2NO_4 = 591.4$.

CAS — 59995-65-2 (pinaverium); 53251-94-8 (pinaverium bromide).

ATC — A03AX04.

ATC Vet — QA03AX04.



Profile

Pinaverium bromide is a calcium-channel blocker with some antimuscarinic-like effects. It is used for the relief of gastrointestinal spasm in usual doses of 50 mg orally three times daily at mealtimes.

Effects on the gastrointestinal tract. Two patients had heartburn and dysphagia after taking pinaverium bromide orally between meals; endoscopy revealed acute oesophageal ulceration, which healed on stopping treatment.¹ The manufacturer's recommendation to take pinaverium bromide during meals was emphasised.

1. André J-M, et al. Ulcères oesophagiens après prise de bromure de pinaverium. *Acta Endosc* 1980; **10**: 289–91.

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Dicetel; **Austria:** Dicetel; **Belg.:** Dicetel; **Braz.:** Dicetel; **Canad.:** Dicetel; **Chile:** Eldicet; Laudil†; **Cz.:** Dicetel; **Fr.:** Dicetel; **Gr.:** Dicetel; **Hung.:** Dicetel; **India:** Eldicet; **Ital.:** Dicetel; **Mex.:** Dicetel; Зерпыцо; **Philipp.:** Eldicet; **Port.:** Dicetel; **Rus.:** Dicetel (Дюцетел); **Spain:** Eldicet; **Switz.:** Dicetel; **Thai.:** Dicetel; **Turk.:** Dicetel; **Venez.:** Dicetel.

Maritime Pine

Cluster Pine; Strandkiefer.

CAS — 174882-69-0 (pycnogenol).

Pharmacopoeias. In *USNF*.

USNF 26 (Maritime Pine). It consists of the bark of stems of *Pinus pinaster* (*Pinus maritima*) (Pinaceae). It contains not less than 8.0% and not more than 12.0% of procyanidins, calculated on the dried basis and is intended to be used in the preparation of extracts only and is not for direct human consumption. Store at a temperature of 25°, excursions permitted between 15° and 30°. Protect from moisture.

Profile

The bark of the maritime pine, *Pinus pinaster* (*P. maritima*) (Pinaceae) is a source of flavonoid compounds (p.2304). A mixture of procyanidins extracted from the bark is known as pycnogenol, although the term pycnogenols has also been applied to procyanidin flavonoids in general. Preparations of such bark extracts are promoted for their antioxidant action.

Maritime pine is a source of pine needle oil (see Pine Oil, p.2368). Pine needle oil from maritime pine (*Pinus pinaster* oil) is included in preparations for minor respiratory-tract disorders

and in topical preparations for the relief of musculoskeletal, joint, and soft-tissue disorders. Turpentine oil (p.2406) is distilled from the oleoresin.

Preparations

USP 31: Maritime Pine Extract.

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: **Arg.:** Aseptobron; **Ital.:** Algorex; Feblil Plus; Flagofort; Signum; **Philipp.:** Pynocare 40 Actisome; **UK:** Zinopin; **USA:** Pycnogenol Plus.

Scots Pine

Pin Sylvestre; Pinus Sylvestris; Scotch pine.

Pharmacopoeias. In *Fr.*

Profile

The sprouts of the Scots pine, *Pinus sylvestris* (Pinaceae), are used in herbal medicine for the treatment of catarrh and in topical preparations for mild muscular pain.

Scots pine is a source of pine sylvestris oil, (see p.2368) and pine needle oil (see Pine Oil, p.2368).

Pine Oil

Profile

Pine oil from unspecified species of pine is included in preparations for the relief of coughs and cold symptoms and in topical preparations for the relief of pain in musculoskeletal, joint, and soft-tissue disorders.

Oils from fresh needles, tips, and boughs of *Pinus nigra*, *P. mugo* var. *pumilio*, *P. pinaster* (Maritime Pine, p.2368), and *P. sylvestris* (Scots Pine, p.2368) are all described as pine needle oil.

Specific pine oils include Pine Sylvestris Oil (p.2368), Pumilio Pine Oil (p.2376), and Pinus pinaster oil.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: **Arg.:** Bayagel; Inhalador Medex; Medex Rub; Novobroncol†; Pre Calent; **Austral.:** Solypol†; Toxylx Chest Rub†; **Belg.:** Inopetol; **Braz.:** Peitoral Martel†; **Chile:** Balsamo Leon†; Hansaplast Descongestionante; Hustagil†; Mentholatum Inhalador; Menthose; **Cz.:** Dr Theiss Eucalyptus Erkaltungs-Balsam†; Pinosol; **Fr.:** Aromasol; Dinacode†; Febrectol; Maghara; Poudre du Marcheur; **Ger.:** Babiforton†; Bronchialbalsam†; Bronchoforton Kinderbalsam; Emser Nasensalbe N†; Nasentropfen-ratiopharm†; Pinimenthol Erkaltungsinhalat; Pinimenthol Erkaltungssalbe; Pinimenthol Liquidum; Pinimenthol Nasensalbe†; Pinimenthol S†; stas Erkaltungssalbe mild†; stas Erkaltungssalbe†; Tetesept Badekonzentrat Erkaltungs Bad N†; Tetesept Erkaltungs Balsam N mentholfrei; Transpulmin Baby; Transpulmin Kinderbalsam S; Tussamag Erkaltungsbalsam N†; **Indon.:** Sloan's Liniment; **Israel:** Ment-O-Cap; **Ital.:** Calypol; Ozopulmin; Ozopulmin G; Pulmarin; Sloan; Vicks Inhalant; **Mex.:** Balsamo Ifusa; **NZ:** Karvol; Toxylx Chest Rub; **Philipp.:** Kamillosan M; **Pol.:** Analgol; Analgol; Eukalipiss; Herbolin; Herbolin D; Inhalol; Pinimentol; Pinosol; Pulmonil; Reumatik; Reumosoil; Rhin-Bac; **Port.:** Freimax†; Lesil; **Rus.:** Carmolis Fluid (Кармолис Жидкость)†; Pinosol (Пиносол); Tussamag Balsam (Туссамар Бальзам от Простуды); **S.Afr.:** Karvol; RespiSniffers; Woodward's Inhalant; **Singapore:** Karvol; **Switz.:** Carmol; Demo pommade contre les refroidissements†; Makaphyt Baume†; Novital; Perskindol Classic; Pinimenthol Baby†; Pinimenthol-N†; Pinimenthol†; Pulmex; Volo Bain antirefroidissement; Volo Medicinal bain antirhumatisme; Ziegella; **UK:** Dragon Balm; Piddes Smelling Salts; **Venez.:** Derpinol†; Reugel.

Pine Sylvestris Oil

Borovicová silice; Fir-wool Oil; Kiefernadelöl; Olejek sosny zwyczajnej; Oleum Pini Sylvestris; Pin sylvestre, huile essentielle de; Pini sylvestris aetheroleum; Pini Sylvestris Etheroleum; Pini Sylvestris Aetheroleum; Scotch Pine Needle Oil; Scots Pine Needle Oil; Sylvestris Pine Oil.

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

Ph. Eur. 6.2 (Pine Sylvestris Oil). An essential oil obtained by steam distillation of the fresh leaves and branches of *Pinus sylvestris*. A suitable antioxidant may be added. A clear, colourless or pale yellow liquid with a characteristic odour. Relative density 0.855 to 0.875. Store in well-filled airtight containers at a temperature not exceeding 25°. Protect from light.

Profile

Pine sylvestris oil is obtained from the needles and tips of Scots Pine (p.2368). It is used for catarrh and related disorders of the respiratory tract, often with other volatile substances. It is applied externally for rheumatic disorders and is used in aromatherapy.

P. sylvestris is a source of pine needle oil (see Pine Oil, p.2368).

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: **Arg.:** Bronco Etersan; **Austral.:** Karvol†; **Austria:** Bronchoforton†; Colda; Emser Nasensalbe; Erkaltungsbalsam; Luuf Balsam; Piniment; **Cz.:** Mucoplant Eukalyptov; Pinosol; **Fr.:** Bronchorectine au Citral; Nazinette du Docteur Gilbert; **Ger.:** Aerosol Spitzen N†; Bronchicum Balsam mit Eukalyptusol†; Eucabal-Balsam S†; Hustagil Erkaltungsbalsam†; Melrosom Medizinabald†; Olynth Erkaltungsbalsam†; Phardol Rheuma†; Piniol Erkaltungsbalsam†; Sanopinwern; Tumarol Kinderbalsam; **Irl.:** Karvol; **Israel:** Karvol; **Ital.:** Abiostil; **Neth.:** Luuf Verkoudheidsbalsam; **Pol.:** Sirupus Pini Compositus; Sirupus Tussipini; Sirupus Tussipini D; **Port.:** Solube-

ol†; **Rus.:** Eucabal-S (Эвкabal C); **S.Afr.:** Oleum Salviae Comp; **Spain:** Balsamo Kneipp†; Genurat; Mitiderma†; Pulmofasa; Sinus Inhalaciones; Vapores Pyt; **Switz.:** Frixo-Dragon Vert†; Marament-N; **UK:** Karvol; Potter's Catarrh Pastilles; Proctor's Pinielyptus.

Pinene

2,6,6-Trimethylbicyclo[3.1.1]hept-2-ene (α -pinene); 6,6-dimethyl-2-methylene-bicyclo[3.1.1]heptane (β -pinene).

$C_{10}H_{16} = 136.2$.

CAS — 80-56-8 (α -pinene); 127-91-3 (β -pinene).

Profile

Pinene is a terpene constituent of turpentine oil (p.2406) and many other essential oils and has been used in preparations for biliary-tract, urinary-tract, and other disorders. It exists as 2 isomers, α -pinene and β -pinene (nopinene, norpinene, terbenzene, terebentene).

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: **Arg.:** Anastim con RTH; **Austria:** Rowachol; Rowatinex; **Braz.:** Quelodin†; **Chile:** Rowatinex; **Cz.:** Rowachol; Rowatinex; **Fr.:** Pectoderme†; **Ger.:** Lindofluid N; Rowachol; Rowachol comp†; Rowachol Digestiv; Rowatinex; **Hong Kong:** Neo-Rowachol; Neo-Rowatinex; Rowachol; Rowatinex; **Hung.:** Rowachol; Rowatinex; **Irl.:** Rowachol; Rowatinex; **Israel:** Rowachol; Rowatinex; **Malaysia:** Rowachol; Rowatinex; **Mex.:** Cholex; **Philipp.:** Rowachol; Rowatinex; **Pol.:** Rowachol; Rowatinex; Terpichol; **Spain:** Rowachol; Rowanefrin; **Switz.:** Rowachol; **Thai.:** Rowachol; Rowatinex; **UK:** Rowachol; **Venez.:** Rowachol; Rowatinex.

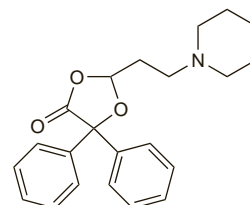
Pipoxolan (BAN, pINN)

Pipoxolán; Pipoxolanum. 5,5-Diphenyl-2-(2-piperidinoethyl)-1,3-dioxolan-4-one.

Пипоксолан

$C_{22}H_{25}NO_3 = 351.4$.

CAS — 23744-24-3.



Pipoxolan Hydrochloride (BANM, USAN, pINN)

Hidrocloruro de pipoxolán; Pipoxolan, Chlorhydrate de; Pipoxolani Hydrochloridum.

Пипоксолана Гидрохлорид

$C_{22}H_{25}NO_3 \cdot HCl = 387.9$.

CAS — 18174-58-8.

Profile

Pipoxolan has been used as the base and the hydrochloride as a smooth muscle relaxant.

Preparations

Proprietary Preparations (details are given in Part 3)

Ger.: Rowaproxin†; **Hong Kong:** Rowaproxin†; **Malaysia:** Rowaproxin†.

Multi-ingredient: **Irl.:** Migranat.

Pirenoxine Sodium (HNN)

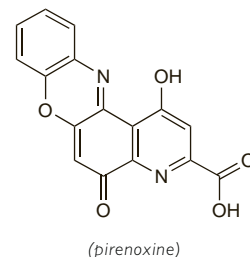
Catalin Sodium; Natrii Pirenoxinum; Pirenoxina sódica; Pirénoxine Sodique; Pírenoxone Sodium. Sodium 1-hydroxy-5-oxo-5H-pyrido[3,2-g]phenoxazine-3-carboxylate.

Натрий Пиреноксин

$C_{16}H_7N_3NaO_5 = 330.2$.

CAS — 1043-21-6 (pirenoxine); 51410-30-1 (pirenoxine sodium).

ATC Vet — Q501XA91.



Pharmacopoeias. *Jpn* includes Pirenoxine.

Profile

Pirenexine sodium is used in the treatment of cataracts, usually as 0.005% eye drops.

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Catalin†; **Braz.:** Clarvisor; **Ger.:** Clarvisor†; **Gr.:** Catalin; **Hong Kong:** Catalin; Kary Uni; **India:** Catalin; **Indon.:** Catalin; Kary Uni; **Ital.:** Clarvisan; Pirfalin; **Jpn:** Catalin; **Malaysia:** Catalin†; **Mex.:** Clarvisan†; **Philipp.:** Catalin; Kary Uni; **Pol.:** Catalin; **Port.:** Clarvisan; **Singapore:** Catalin; Kary Uni; **Spain:** Clarvisan; **Thai.:** Catalin; Kary Uni.

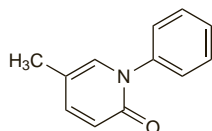
Pirfenidone (USAN, rINN)

AMR-69; Pirfenidona; Pirfénidone; Pirfenidonum. 5-Methyl-1-phenyl-2-(1*H*)-pyridone.

Пирфенидон

$C_{12}H_{11}NO = 185.2$.

CAS — 53179-13-8.

**Profile**

Pirfenidone is an antifibrotic drug under investigation in disorders such as idiopathic pulmonary fibrosis, multiple sclerosis, and familial adenomatous polyposis.

♦ References.

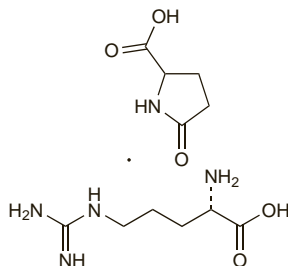
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- Walker JE, Margolin SB. Pirfenidone for chronic progressive multiple sclerosis. *Multiple Sclerosis* 2001; **7**: 305–12.
- Nagai S, *et al.* Open-label compassionate use one year-treatment with pirfenidone to patients with chronic pulmonary fibrosis. *Intern Med* 2002; **41**: 1118–23.
- Bowen JD, *et al.* Open-label study of pirfenidone in patients with progressive forms of multiple sclerosis. *Multiple Sclerosis* 2003; **9**: 280–3.
- Lindor NM, *et al.* Desmoid tumors in familial adenomatous polyposis: a pilot project evaluating efficacy of treatment with pirfenidone. *Am J Gastroenterol* 2003; **98**: 1868–74.
- Azuma A, *et al.* Double-blind, placebo-controlled trial of pirfenidone in patients with idiopathic pulmonary fibrosis. *Am J Respir Crit Care Med* 2005; **171**: 1040–7.
- Walker JE, *et al.* A double-blind, randomized, controlled study of oral pirfenidone for treatment of secondary progressive multiple sclerosis. *Multiple Sclerosis* 2005; **11**: 149–58.
- Babovic-Vuksanovic D, *et al.* Phase II trial of pirfenidone in adults with neurofibromatosis type 1. *Neurology* 2006; **67**: 1860–2.
- Shi S, *et al.* Single- and multiple-dose pharmacokinetics of pirfenidone, an antifibrotic agent, in healthy Chinese volunteers. *J Clin Pharmacol* 2007; **47**: 1268–76.

Pirglutargine

Arginina, piroglutamato de; Arginine Pidolate; Arginine Pyroglutamate. L-Arginine DL-pyroglutamate.

$C_{11}H_{21}N_5O_5 = 303.3$.

CAS — 64855-91-0.

**Profile**

Pirglutargine has been used for its reputed cerebral stimulant effect.

Preparations

Proprietary Preparations (details are given in Part 3)

Ital.: Adjuvant†.

Multi-ingredient: Port.: Detoxergon.

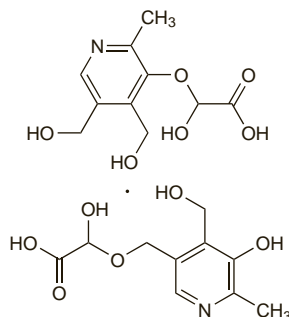
Piridoxilate (BAN, rINN)

Piridoxilato; Piridoxilatum; Pyridoxine α_5 -Hemiacetal Glyoxylate; Pyridoxylate. The reciprocal salt of 2-(5-hydroxy-4-hydroxymethyl-6-methyl-3-pyridylmethoxy)glycolic acid with 2-[4,5-bis(hydroxymethyl)-2-methyl-3-pyridyloxy]glycolic acid (1:1).

Пиридоксилат

$C_{10}H_{13}NO_6 \cdot C_{10}H_{13}NO_6 = 486.4$.

CAS — 24340-35-0.

**Profile**

Piridoxilate was formerly used in the treatment of various circulatory disorders. It has been associated with the development of kidney stones and renal impairment.

Pirisudanol Maleate (rINN)

Dimaleato de pirisudanol; Pirisudanol, Maléate de; Pirisudanoli Maleas; Pyrisuccideanol Maleate. 2-Dimethylaminoethyl 5-hydroxy-4-hydroxymethyl-6-methyl-3-pyridylmethyl succinate maleate.

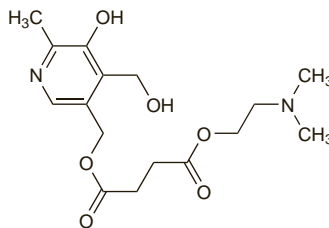
Пирисуданола Малеат

$C_{16}H_{24}N_2O_6 \cdot (C_4H_4O_4)_2 = 572.5$.

CAS — 33605-94-6 (pirisudanol); 53659-00-0 (pirisudanol maleate).

ATC — N06BX08.

ATC Vet — QN06BX08.



(pirisudanol)

Profile

Pirisudanol is the succinic acid ester of pyridoxine and of deanol. It has been given as the maleate in the management of impaired mental function in doses of up to 1.2 g daily.

Preparations

Proprietary Preparations (details are given in Part 3)

Ital.: Mentium†; **Port.:** Pridana; **Spain:** Mentis.

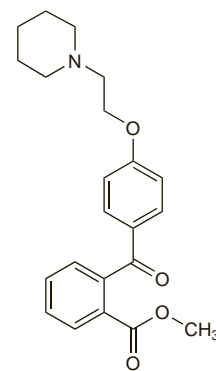
Pitofenone Hydrochloride (rINN)

Hidrocloruro de pitofenona; Pitofénone, Chlorhydrate de; Pitofenoni Hydrochloridum. Methyl 2-[4-(2-piperidinoethoxy)benzoyl]benzoate hydrochloride.

Питофенона Гидрохлорид

$C_{22}H_{25}NO_4 \cdot HCl = 403.9$.

CAS — 54063-52-4 (pitofenone); 1248-42-6 (pitofenone hydrochloride).



(pitofenone)

Profile

Pitofenone hydrochloride has been used as an antispasmodic.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: Cz.: Algifen; Algifen Neo; Analgin; Spasmopan; **Fin.:** Litalgin; **Pol.:** Spasmalgon; **Rus.:** Baralgetas (Баралгетас)†; Maxigan (Максиган); Nebalgon (Небалган); Novigan (Новиган); Revalgin (Ревалгин); Spasgan (Спазган); Spasmalgon (Спазмалгон); Spasmalin (Спазмалин); **S.Afr.:** Baralgan†; **Thai.:** Kanegan; **Venez.:** Flemibar.

Powdered Pituitary (Posterior Lobe)

Hipófisis pulverizada (neurohipófisis); Hypophysis Cerebri Pars Posterior; Hypophysis Sicca; Ipofisi Posteriore; Pituitarium Posterior Pulveratum; Pituitary; Posterior Pituitary.

NOTE. Pituitary Extract (Posterior) is *BAN*.

Pharmacopoeias. In *Chin*.

Profile

Powdered pituitary (posterior lobe) is a preparation from the posterior lobes of mammalian pituitary bodies. It has oxytocic, pressor, antidiuretic, and hyperglycaemic actions and has generally been replaced by compounds or preparations with more specific actions such as oxytocin (p.2015) and desmopressin (p.2185).

It has been included as an ingredient of a number of preparations of combined tissue extracts promoted as tonics or for a variety of non-endocrine disorders. Hypersensitivity reactions, including anaphylaxis, have occasionally been reported.

Plantain

Llantén; Plantain grand.

Pharmacopoeias. *Chin.* and *Jpn.* include the herb and seeds from *Plantago asiatica*. *Chin* also permits *P. depressa*.

Profile

The seeds and leaves of the common or greater plantain (*Plantago major*) are reported to possess diuretic and antihæmorrhagic properties. They are used in herbal preparations.

The Asian plantain (*P. asiatica*) and the depressed plantain (*P. depressa*) are also used in herbal medicine.

The ribwort plantain (*P. lanceolata*) is described on p.2379.

Homoeopathy. Plantain has been used in homoeopathic medicines under the following names: Plantago; Plantago major; Plant. m.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: Fr.: Biopause solution intime; Ephydrol; **Indon.:** Hyric; Renax; **Port.:** Erpecalm; **Switz.:** Kernosan Elixir; Pastilles pectorales Demo N; Pectoral N; Tisane pectorale antitussive; Tisane pectorale pour les enfants.

Plastics

Plásticos.

Pharmacopoeias. Many pharmacopoeias include standards for plastic containers and closures.

Adverse Effects

Plastic materials used in medicine and pharmacy may give rise to adverse effects, either by direct contact of the plastic with tissues or by indirect contact (for example, when a solution stored in a plastic container, such as a disposable syringe, is injected). Adverse effects may also arise among workers through handling the materials or by inhaling fumes during manufacture.

Pure polymeric plastics appear to be of low toxicity, though carcinogenic effects have been produced by some on prolonged implantation. However, some monomers are toxic, as may be substances added during manufacture to impart specific physical