ine, the (–)-(*S*)-isomer of dropropizine, is claimed to produce fewer CNS effects and is used similarly in an oral dose of 60 mg up to three times daily.

◊ References.

1. Catena E, Daffonchio L. Efficacy and tolerability of levodropropizine in adult patients with non-productive cough: comparison with dextromethorphan. *Pulm Pharmacol Ther* 1997; **10:** 89–96.

Preparations

Proprietary Preparations (details are given in Part 3)
Arg.: Perlatos; ***Belg.:*** Catabex; Levotuss; ***Braz.:*** Antux; Atossion; Ecos; Eritos; Flextoss; Neotoss; Percof; Tussiflex D; Vibral; Zyplo; ***Chile:*** Broncard; ***Cz.:*** Ditustat; Levopront; ***Ger.:*** Larylin Husten-Stiller; ***Gr.:*** Dropavix; Levotuss; ***Hung.:*** Levopront; ***Indon.:*** Levopront; ***Ital.:*** Danka; Domutussina; Levotuss; Rapitux†; Ribex Tosse; Salvituss; Tau-Tux; ***Mex.:*** Levocof; Troferit; Zyplo; ***Neth.:*** Levotuss; ***Philipp.:*** Levopront; ***Pol.:*** Levopront; ***Port.:*** Catabina; Levotuss; ***Singapore:*** Levopront†; ***Spain:*** Levotuss; Tautoss; ***Thai.:*** Levopront; ***Turk.:*** Levopront; ***Venez.:*** Antux; Levopront.

Multi-ingredient: ***Belg.:*** Catabex Expectorans†; ***Braz.:*** Notuss; ***Ital.:*** Elisir Terpina; Guaiacalcium Complex; Ribexen con Espettorante; Tiocalmina; Tussamag Complex; ***Port.:*** Catabina Expectorante.

Elecampane

Ala; Alant; Aunée; Énula; Énula campana; Helenio; Ínula; Inula.

Девясил Высокий

CAS — 97676-35-2 (elecampane oil).

Pharmacopoeias. In *Chin.* (which also includes various other species of *Inula*) and *Fr.*

Profile

Elecampane is the root of *Inula helenium* (Compositae). It has been used in herbal preparations for the treatment of cough for its supposed expectorant and cough suppressant properties. It is also used as a flavouring in foods and alcoholic beverages.

Elecampane contains sesquiterpene lactones including alantolactone (alant camphor; elecampane camphor; inula camphor; helenin), which was formerly used in the treatment of worm infections, and has also been an ingredient of some cough preparations.

Elecampane oil has been used in aromatherapy.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: ***Austria:*** Brust- und Hustentee St Severin; ***Cz.:*** Klosterfrau Melisana; Species Cholagogae Planta; ***Fr.:*** Mediflor Tisane Digestive No 3; Mediflor Tisane Hepatique No 5; ***Ger.:*** Leber-Galle-Tropfen 83†; ***Pol.:*** Pectosol; ***Rus.:*** Original Grosser Bittner Balsam (Оригинальный Большой Бальзам Биттнера); ***S.Afr.:*** Wonderkroonessens; ***Spain:*** Bronpul†; Natusor Asmaten†; Natusor Broncopul†; ***Switz.:*** Hederix; Padmed Laxan; ***UK:*** Catarrh-eeze; Cough-eeze; Horehound and Aniseed Cough Mixture; Vegetable Cough Remover.

Ephedra ⊗

Efedra; Ma-huang.

Хвойник; Эфедра хвощевая (*Ephedra equisetina*)

Pharmacopoeias. In *Chin.*, *Ger.*, and *Jpn*.
Chin. also includes the roots of *Ephedra sinica* or *E. intermedia*.

Profile

Ephedra consists of the dried young branches of *Ephedra sinica*, *E. equisetina*, and *E. gerardiana* (including *E. nebrodensis*) (Ephedraceae), containing not less than 1.25% of alkaloids, calculated as ephedrine.

The action of ephedra is due to the presence of ephedrine (below) and pseudoephedrine (p.1571). It has been used chiefly as a source of these alkaloids. The FDA states that ephedra-containing dietary supplements are unsafe and the sale of these products is banned in the USA. Other countries have also banned the sale of ephedra-containing dietary supplements.

◊ For reference to the adverse effects of herbal products containing ephedra see Abuse under Ephedrine, below.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: ***Canad.:*** Herbal Cold Relief†; ***Ger.:*** Cardibisana†; Cefadrin.

Ephedrine *(BAN)* ⊗

Efedriini; Efedrin; Efedrina; Efedrinas; Ephedrina; Éphédrine; (–)-Ephedrine; Ephedrinum. (1*R*,2*S*)-2-Methylamino-1-phenylpropan-1-ol.

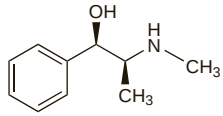
Эфедрин

$C_{10}H_{15}NO$ = 165.2.

CAS — 299-42-3 (anhydrous ephedrine); 50906-05-3 (ephedrine hemihydrate).

ATC — R01AA03; R01AB05; R03CA02; S01FB02.

ATC Vet — QG04BX90; QR01AA03; QR01AB05; QR03CA02; QS01FB02.



Description. Ephedrine is an alkaloid obtained from species of *Ephedra*, or prepared synthetically. It may exist in a hemihydrate form or as the anhydrous substance.
The following terms have been used as 'street names' (see p.vi) or slang names for various forms of ephedrine:
Trucker's Speed.

Pharmacopoeias. In *Eur.* (see p.vii), *Int.*, and *US*, which have specifications, in either the same monograph or in separate monographs, for the anhydrous form and for the hemihydrate.
Ph. Eur. 6.2 (Ephedrine, Anhydrous). A white or almost white, crystalline powder or colourless crystals. Soluble in water; very soluble in alcohol. It melts at about 36°. Protect from light.
Ph. Eur. 6.2 (Ephedrine Hemihydrate; Ephedrine BP 2008). A white or almost white, crystalline powder or colourless crystals. Soluble in water; very soluble in alcohol. It melts at about 42°, determined without previous drying. Protect from light.
USP 31 (Ephedrine). It is anhydrous or contains not more than one-half molecule of water of hydration. It is an unctuous, practically colourless solid or white crystals or granules. It gradually decomposes on exposure to light. M.p. between 33° and 40°, the variability being the result of differences in the moisture content, anhydrous ephedrine having a lower melting-point than the hemihydrate. Soluble 1 in 20 of water and 1 in 0.2 of alcohol; soluble in chloroform and in ether; moderately and slowly soluble in liquid paraffin, the solution becoming turbid if the ephedrine contains more than about 1% of water. Its solutions are alkaline to litmus. Store in airtight containers at a temperature not exceeding 8°. Protect from light.

Ephedrine Hydrochloride *(BANM)* ⊗

Efedriinihydrokloridi; Efedrin Hidroklorür; Efedrin hydrochlorid; Efedrina, hidrocloruro de; Efedrin-hidroklorid; Efedrinhydroklorid; Efedrino hidrochloridas; Efedryny chlorowodorek; Ephedrinae Hydrochloridum; Éphédrine, chlorhydrate d'; Ephedrine Chloride; Ephedrini hydrochloridum; Ephedrinium Chloratum; *l*-Ephedrinum Hydrochloricum.

Эфедрина Гидрохлорид

$C_{10}H_{15}NO,HCl$ = 201.7.

CAS — 50-98-6.

ATC — R01AA03; R01AB05; R03CA02; S01FB02.

ATC Vet — QR01AA03; QR01AB05; QR03CA02; QS01FB02.

Pharmacopoeias. In *Chin.*, *Eur.* (see p.vii), *Int.*, *Jpn*, *US*, and *Viet*.
Ph. Eur. 6.2 (Ephedrine Hydrochloride). A white or almost white, crystalline powder or colourless crystals. Freely soluble in water; soluble in alcohol. It melts at about 219°. Protect from light.
USP 31 (Ephedrine Hydrochloride). Fine, white, odourless crystals or powder. Soluble 1 in 3 of water and 1 in 14 of alcohol; insoluble in ether. Protect from light.

Ephedrine Sulfate ⊗

Efedrina, sulfato de; Ephedrine Sulphate *(BANM)*.

Эфедрина Сульфат

$(C_{10}H_{15}NO)_2,H_2SO_4$ = 428.5.

CAS — 134-72-5.

ATC — R01AA03; R01AB05; R03CA02; S01FB02.

ATC Vet — QR01AA03; QR01AB05; QR03CA02; QS01FB02.

Pharmacopoeias. In *Int.* and *US*.
USP 31 (Ephedrine Sulfate). Fine, white, odourless crystals or powder. It darkens on exposure to light. Soluble 1 in 1.3 of water and 1 in 90 of alcohol. Protect from light.

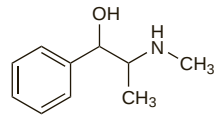
Racephedrine Hydrochloride *(BANM, USAN, rINNM)* ⊗

Efedriinihydrokloridi, raseeminen; Efedrinhydroklorid, racemisk; Efedrino (raceminio) hidrochloridas; Éphédrine (chlorhydrate d') racémique; *dl*-Ephedrine Hydrochloride; Ephedrini racemici hydrochloridum; *dl*-Ephedrinium Chloride; Hidrocloruro de racefedrina; Racém efedrin-hidroklorid; Racemic Ephedrine Hydrochloride; Racéphédrine, Chlorhydrate de; Racephedrini Hydrochloridum. (±)-2-Methylamino-1-phenylpropan-1-ol hydrochloride.

Рацефедрина Гидрохлорид

$C_{10}H_{15}NO,HCl$ = 201.7.

CAS — 90-81-3 (racephedrine); 134-71-4 (racephedrine hydrochloride).



(racephedrine)

Pharmacopoeias. In *Eur.*
Ph. Eur. 6.2 (Ephedrine Hydrochloride, Racemic; Racephedrine Hydrochloride BP 2008). A white or almost white, crystalline powder or colourless crystals. Freely soluble in water; soluble in alcohol; practically insoluble in ether. It melts at about 188°. Protect from light.

Adverse Effects

As for Sympathomimetics, p.1407. Ephedrine has both alpha- and beta-agonist effects and its commonest adverse effects are tachycardia, anxiety, restlessness, and insomnia. Tremor, dry mouth, impaired circulation to the extremities, hypertension, and cardiac arrhythmias may also occur.

Ephedrine may be used in labour to maintain blood pressure during spinal anaesthesia but can cause fetal tachycardia.

Paranoid psychosis, delusions, and hallucinations may also follow ephedrine overdosage. Prolonged use has no cumulative effect, but tolerance with dependence has been reported.

◊ For a discussion of the toxicity reported from the self-administration of ephedrine-containing dietary supplements or herbal stimulants, see Abuse, below.

Precautions

As for Sympathomimetics, p.1407. Ephedrine should be given with care to patients with hyperthyroidism, diabetes mellitus, ischaemic heart disease, hypertension, renal impairment, or angle-closure glaucoma. In patients with prostatic enlargement, ephedrine may increase difficulty with micturition.

Irritability and disturbed sleep have been reported in breast-fed infants.

Abuse. Although illicit use of ephedrine is primarily in the manufacture of street stimulants such as metamfetamine (p.2158), there is increasing evidence of the abuse of ephedrine preparations in some countries,[1] and the public health and social problems associated with its abuse appear to be significant, particularly in certain African countries. Ephedrine is also sold as a street substitute for 'Ecstasy' (Methylenedioxymethamfetamine, p.2159).

Adverse effects reported with illicit ephedrine use include cardiovascular toxicity[2,3] and chest pain.[4]

There is controversy over the abuse liability of over-the-counter (OTC) stimulants such as ephedrine:[5] some studies have indicated that ephedrine is, overall, a relatively weak reinforcer whereas others have suggested that the abuse potential may be high. Examination of the characteristics of 5 patients who had been taking ephedrine-containing OTC preparations in high doses for periods ranging from 8 months to 2 years, emphasised the reinforcing and, therefore, addictive potential of ephedrine; similar observations were made for 2 patients who had ingested phenylpropanolamine long term, combined with pseudoephedrine in one of these cases. The authors suggested that, for most people, OTC preparations containing weaker sympathomimetics will not be reinforcing at the recommended doses. However, these cases strengthen the research findings that high-dose use of an OTC stimulant increases its potency, and thus its effects become more like amfetamine (p.2150).

Toxicity has also been reported[6-8] from the self-administration of ephedrine-containing dietary supplements or herbal stimulants, usually based on ephedra (ma-huang) and marketed for a variety of purposes including weight loss and as an alternative to illegal drugs of abuse. Not all cases of ephedrine toxicity have arisen as a result of overt abuse but rather because of inadequate labelling of content and dosage instructions on some unlicensed products. A small study found that combinations of herbal caffeine and ephedra alkaloids taken in recommended amounts resulted in plasma ephedrine concentrations that exceeded the usual therapeutic range. Significant increases occurred in blood pressure and heart rate, and unfavourable effects on glucose and potassium homoeostasis were noted.[9] The use of ephedra-containing dietary supplements is now banned in the USA and some other countries.

Adverse effects from ingestion of ephedrine-containing OTC preparations, including herbal products (usually in high doses and/or long term) have included coronary artery thrombosis,[10] myocardial infarction, seizures,[11] psychotic reactions,[12] nephrolithiasis,[13-15] and myocarditis;[16] a number of fatalities have been reported. Frank dependence has been reported in female weightlifters following long-term use of high doses.[17]

For a report of urinary calculi developing in a patient who had ingested a preparation containing guaifenesin and ephedrine, see Abuse, under Guaifenesin, p.1561.

1. WHO. Recommendations from the Expert Committee on Drug Dependence. *WHO Drug Inf* 1998; **12:** 227–9.
2. Cockings JGL, Brown MA. Ephedrine abuse causing acute myocardial infarction. *Med J Aust* 1997; **167:** 199–200.
3. Zahn KA, *et al.* Cardiovascular toxicity after ingestion of "herbal ecstacy" [sic]. *J Emerg Med* 1999; **17:** 289–91.
4. James LP, *et al.* Sympathomimetic drug use in adolescents presenting to a pediatric emergency department with chest pain. *J Toxicol Clin Toxicol* 1998; **36:** 321–8.
5. Tinsley JA, Watkins DD. Over-the-counter stimulants: abuse and addiction. *Mayo Clin Proc* 1998; **73:** 977–82.
6. Haller CA, Benowitz NL. Adverse cardiovascular and central nervous system events associated with dietary supplements containing ephedra alkaloids. *N Engl J Med* 2000; **343:** 1833–8.
7. Dennehy CE, *et al.* Dietary supplement-related adverse events reported to the California Poison Control System. *Am J Health-Syst Pharm* 2005; **62:** 1476–82.
8. Samenuk D, *et al.* Adverse cardiovascular events temporally associated with ma huang, an herbal source of ephedrine. *Mayo Clin Proc* 2002; **77:** 12–16.
9. Haller CA, *et al.* Short-term metabolic and hemodynamic effects of ephedra and guarana combinations. *Clin Pharmacol Ther* 2005; **77:** 560–71.
10. Sola S, *et al.* Coronary dissection and thrombosis after ingestion of ephedra. *Am J Med* 2004; **116:** 645–6.
11. Anonymous. Adverse events associated with ephedrine-containing products—Texas, December 1993-September 1995. *JAMA* 1996; **276:** 1711–12.
12. Doyle H, Kargin M. Herbal stimulant containing ephedrine has also caused psychosis. *BMJ* 1996; **313:** 756.
13. Powell T, *et al.* Ma-huang strikes again: ephedrine nephrolithiasis. *Am J Kidney Dis* 1998; **32:** 153–9.
14. Blau JJ. Ephedrine nephrolithiasis associated with chronic ephedrine abuse. *J Urol (Baltimore)* 1998; **160:** 825.
15. Hoffman N, *et al.* Resolution of ephedrine stones with dissolution therapy. *Urology* 2003; **61:** 1035.
16. Zaacks SM, *et al.* Hypersensitivity myocarditis associated with ephedra use. *J Toxicol Clin Toxicol* 1999; **37:** 485–9.
17. Gruber AJ, Pope HG. Ephedrine abuse among 36 female weightlifters. *Am J Addict* 1998; **7:** 256–61.

Interactions

As for Sympathomimetics, p.1407. Ephedrine has direct and indirect actions and may cause a hypertensive crisis in patients receiving an MAOI (including a RIMA); the possibility of such an interaction after intranasal use of ephedrine should also be borne in mind. See also under Phenelzine (p.418) and Moclobemide (p.411). Since ephedrine has both alpha- and beta-agonist properties it should be avoided or used with care in patients undergoing anaesthesia with cyclopropane, halothane, or other volatile anaesthetics. An increased risk of arrhythmias may occur if given to patients receiving cardiac glycosides, quinidine, or tricyclic antidepressants, and there is an increased risk of vasoconstrictor or pressor effects in patients receiving ergot alkaloids or oxytocin. The rate of metabolism of some other drugs is increased by ephedrine. For mention of the potential additive stimulant effects seen with caffeine and ephedrine, see Sympathomimetics, under Caffeine, p.1118.

Pharmacokinetics

Ephedrine is readily and completely absorbed from the gastrointestinal tract. It is excreted largely unchanged in the urine, with small amounts of metabolites produced by hepatic metabolism. Ephedrine has been variously reported to have a plasma half-life ranging from 3 to 6 hours depending on urinary pH; elimination is enhanced and half-life accordingly shorter in acid urine.

◊ References.

1. Welling PG, *et al.* Urinary excretion of ephedrine in man without pH control following oral administration of three commercial ephedrine sulfate preparations. *J Pharm Sci* 1971; **60:** 1629–34.
2. Sever PS, *et al.* The metabolism of (−)-ephedrine in man. *Eur J Clin Pharmacol* 1975; **9:** 193–8.
3. Pickup ME, *et al.* The pharmacokinetics of ephedrine after oral dosage in asthmatics receiving acute and chronic treatment. *Br J Clin Pharmacol* 1976; **3:** 123–34.

Uses and Administration

Ephedrine is a sympathomimetic (p.1408) with direct and indirect effects on adrenergic receptors. It has alpha- and beta-adrenergic activity and has pronounced stimulating effects on the CNS. It has a more prolonged though less potent action than adrenaline. In therapeutic doses it raises the blood pressure by increasing cardiac output and also by inducing peripheral vasoconstriction. Tachycardia may occur but is less frequent than with adrenaline. Ephedrine also causes bronchodilatation, reduces intestinal tone and motility, relaxes the bladder wall while contracting the sphincter muscle but relaxes the detrusor muscle of the bladder and usually reduces the activity of the uterus. It has a stimulant action on the respiratory centre. It dilates the pupil but does not affect the light reflexes. After ephedrine has been used for a short while, tachyphylaxis may develop.

Ephedrine salts are used, either alone or in combination preparations, in the symptomatic relief of nasal congestion (p.1548). They may be given orally, or topically as nasal drops or sprays. Ephedrine salts have sometimes been used in motion sickness in combination preparations with hyoscine or an antihistamine and have been tried for postoperative nausea and vomiting (p.1700).

Ephedrine salts have been given parenterally to combat a fall in blood pressure during spinal or epidural anaesthesia. Ephedrine is of little value in hypotensive crises due to shock, circulatory collapse, or haemorrhage. It is no longer generally advocated for orthostatic hypotension.

Ephedrine salts have been used as bronchodilators, but the more $beta_2$-selective sympathomimetics, such as salbutamol, are now preferred.

Other uses of ephedrine salts include diabetic neuropathic oedema, in which they may provide marked relief. They have also been used in micturition disorders.

Nasal drops or sprays usually containing ephedrine 0.5 or 1% are used in the treatment of **nasal congestion**. Ephedrine salts have also been given by oral inhalation.

To reverse **hypotension** induced by spinal or epidural anaesthesia, a solution containing ephedrine hydrochloride 3 mg/mL is given by slow intravenous injection in doses of 3 to 6 mg (or at most 9 mg) repeated every 3 to 4 minutes as required; the maximum total dose is 30 mg. Ephedrine salts have also been given by intramuscular or subcutaneous injection.

The *BNF* suggests an oral dose of 30 to 60 mg of ephedrine hydrochloride three times daily in the treatment of **diabetic neuropathic oedema**.

Several other salts of ephedrine have been given including the camsilate, the levulinate, and the tannate. Racephedrine hydrochloride has also been used.

For children's doses, see Administration in Children, below.

Administration in children. Over-the-counter cough and cold preparations containing sympathomimetic decongestants (including ephedrine) should be used with caution in children and generally avoided in those under 2 years of age (see p.1547). However, the *BNFC* suggests that, in certain circumstances, specialists may prescribe ephedrine nasal drops for children under 2 years in the short-term treatment of severe **nasal congestion** that has not responded to sodium chloride nasal drops or inhalation of warm moist air. Nasal drops or sprays containing ephedrine hydrochloride 0.5% are licensed to treat nasal congestion in young children over 3 months of age. Although not licensed for such use, the *BNFC* recommends a strength of 0.25% for use in children aged 1 to 3 months.

Ephedrine is rarely needed in children for reversal of **hypotension** induced by spinal or epidural anaesthesia, but if it is used the *BNFC* suggests the following doses of a solution containing ephedrine hydrochloride 3 mg/mL, given by slow intravenous injection via a central line:

- 1 to 12 years: 500 to 750 micrograms/kg or 17 to 25 mg/m^2 every 3 to 4 minutes according to response up to a maximum total dose of 30 mg
- 12 to 18 years: 3 to 7.5 mg (maximum 9 mg) repeated every 3 to 4 minutes according to response up to a maximum total dose of 30 mg

Micturition disorders. Ephedrine salts have been used in nocturnal enuresis, although other treatments are usually preferred, and have been tried in patients with stress incontinence but the value of such treatment is not clear.

Spinal anaesthesia. Parenteral sympathomimetics such as ephedrine and phenylephrine have been advocated for the correction of hypotension associated with local anaesthesia. The risk of hypotension with spinal or epidural block is greater than many other forms of nerve block (see Adverse Effects of Central Block, p.1850). Ephedrine has been used[1,2] although not always successfully[3] for the correction of such hypotension. It has also been used prophylactically,[4,5] although prophylactic use during labour has been associated with fetal tachycardia,[5] and adequate hydration of the patient beforehand is more important in minimising hypotension.

1. Hall PA, *et al.* Spinal anaesthesia for Caesarean section: comparison of infusions of phenylephrine and ephedrine. *Br J Anaesth* 1994; **73:** 471–4.
2. Thomas DG, *et al.* Randomized trial of bolus phenylephrine or ephedrine for maintenance of arterial pressure during spinal anaesthesia for Caesarean section. *Br J Anaesth* 1996; **76:** 61–5.
3. Critchley LAH, *et al.* Hypotension during subarachnoid anaesthesia: haemodynamic effects of ephedrine. *Br J Anaesth* 1995; **74:** 373–8.
4. Sternlo J-E, *et al.* Prophylactic im ephedrine in bupivacaine spinal anaesthesia. *Br J Anaesth* 1995; **74:** 517–20.
5. Cleary-Goldman J, *et al.* Prophylactic ephedrine and combined spinal epidural: maternal blood pressure and fetal heart rate patterns. *Obstet Gynecol* 2005; **106:** 466–72.

Preparations

BP 2008: Ephedrine Elixir; Ephedrine Hydrochloride Tablets; Ephedrine Nasal Drops;
USP 31: Ephedrine Sulfate Capsules; Ephedrine Sulfate Injection; Ephedrine Sulfate Nasal Solution; Ephedrine Sulfate Syrup; Theophylline, Ephedrine Hydrochloride, and Phenobarbital Tablets.

Proprietary Preparations (details are given in Part 3)
Arg.: Muchan; ***Belg.:*** Ephedronguent; ***Braz.:*** Unifedrine; ***Chile:*** Efedrosan; ***Gr.:*** Neo Rhinovit; Rhinolex; ***Hung.:*** Epherit; ***Mex.:*** Tendrin; ***Pol.:*** Efrinol; ***Port.:*** Spinefe; ***Turk.:*** Rinitalmit; ***UK:*** CAM; ***USA:*** Kondon's Nasal; ***Venez.:*** Boref†; Colirio Iris.

Multi-ingredient: Numerous preparations are listed in Part 3.

Eprazinone Hydrochloride *(rINNM)*

CE-746; Éprazinone, Chlorhydrate d'; Eprazinoni Hydrochloridum; Hidrocloruro de eprazinona. 3-[4-(β-Ethoxyphenethyl)piperazin-1-yl]-2-methylpropiophenone dihydrochloride.

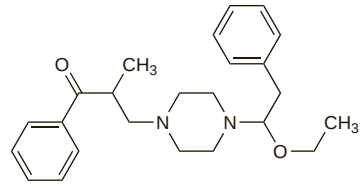
Эпразинона Гидрохлорид

$C_{24}H_{32}N_2O_2.2HCl$ = 453.4.

CAS — 10402-90-1 (eprazinone); 10402-53-6 (eprazinone hydrochloride).

ATC — R05CB04.

ATC Vet — QR05CB04.



(eprazinone)

Profile

Eprazinone hydrochloride has been variously described as having mucolytic or expectorant properties (p.1547) as well as a direct relaxant action on bronchial smooth muscle. It is given in oral doses of 50 to 100 mg three times daily. It has also been given rectally.

Effects on the skin. Skin eruptions have been associated with the oral use of eprazinone.[1,2]

1. Faber M, *et al.* Eprazinonexanthem mit subkornealer Pustelbildung. *Hautarzt* 1984; **35:** 200–3.
2. Tanabe K, *et al.* Non-pigmented fixed drug eruption induced by eprazinone hydrochloride. *Dermatol Online J* 2005; **11:** 25.

Overdosage. Symptoms in two 22-month-old children who received an overdose of 800 mg of eprazinone included somnolence, ataxia, and seizures.[1]

1. Merigot P, *et al.* Les convulsions avec trois antitussifs dérivés substitués de la pipérazine: (zipéprol, éprazinone, éprozinol). *Ann Pediatr (Paris)* 1985; **32:** 504–11.

Preparations

Proprietary Preparations (details are given in Part 3)
Austria: Eftapan; ***Belg.:*** Isilung; ***Ger.:*** Eftapan.

Multi-ingredient: ***Austria:*** Eftapan Tetra.