Uses and Administration

Palonosetron is a 5-HT_3 antagonist used in the prevention of nausea and vomiting induced by cytotoxic chemotherapy and for the prevention of postoperative nausea and vomiting. Palonosetron is given as the hydrochloride but doses are expressed in terms of the base; 280.8 micrograms of palonosetron hydrochloride is equivalent to about 250 micrograms of palonosetron.

For the prevention of acute and delayed **nausea and vomiting** associated with initial and repeat courses of moderately or highly emetogenic cancer **chemotherapy**, a dose of 250 micrograms is given intravenously over 30 seconds about 30 minutes before chemotherapy. Repeated dosing within 7 days is not recommended.

For the prevention of **postoperative** nausea and vomiting, for up to 24 hours after surgery, a single dose of 75 micrograms is given intravenously over 10 seconds immediately before the induction of anaesthesia. Efficacy beyond 24 hours has not been demonstrated.

◊ References.

1. Eisenberg P, *et al.* Improved prevention of moderately emetogenic chemotherapy-induced nausea and vomiting with palonosetron, a pharmacologically novel 5-HT3 receptor antagonist: results of a phase III, single-dose trial versus dolasetron. *Cancer* 2003; **98:** 2473–82.
2. Gralla R, *et al.* Palonosetron improves prevention of chemotherapy-induced nausea and vomiting following moderately emetogenic chemotherapy: results of a double-blind randomized phase III trial comparing single doses of palonosetron with ondansetron. *Ann Oncol* 2003; **14:** 1570–7.
3. Anonymous. Palonosetron (Aloxi) for prevention of nausea and vomiting due to cancer chemotherapy. *Med Lett Drugs Ther* 2004; **46:** 27–8.
4. Siddiqui MAA, Scott LJ. Palonosetron. *Drugs* 2004; **64:** 1125–32.

Preparations

Proprietary Preparations (details are given in Part 3)

Braz.: Onicit; ***Chile:*** Onicit; ***Cz.:*** Aloxi; ***Gr.:*** Aloxi; ***Hung.:*** Aloxi; ***Indon.:*** Paloxi; ***Irl.:*** Aloxi; ***Ital.:*** Aloxi; ***Mex.:*** Onicit; ***Neth.:*** Aloxi; ***Pol.:*** Aloxi; ***UK:*** Aloxi; ***USA:*** Aloxi; ***Venez.:*** Onicit.

Pantoprazole *(BAN, USAN, rINN)*

BY-1023; Pantopratsoli; Pantoprazol; Pantoprazolum; SKF-96022. 5-Difluoromethoxybenzimidazol-2-yl 3,4-dimethoxy-2-pyridylmethyl sulphoxide.

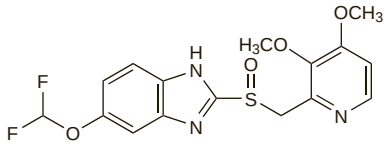
Пантопразол

$C_{16}H_{15}F_2N_3O_4S$ = 383.4.

CAS — 102625-70-7.

ATC — A02BC02.

ATC Vet — QA02BC02.



Pantoprazole Sodium *(BANM, USAN, rINNM)*

Natrii Pantoprazolum; Pantoprazol sódico; Pantoprazole sodique; Pantoprazolum natricum. Pantoprazole sodium sesquihydrate.

Натрий Пантопразол

$C_{16}H_{14}F_2N_3NaO_4S, 1/H_2O$ = 432.4.

CAS — 138786-67-1 (anhydrous pantoprazole sodium); 164579-32-2 (pantoprazole sodium sesquihydrate).

ATC — A02BC02.

ATC Vet — QA02BC02.

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

Ph. Eur. 6.2 (Pantoprazole Sodium Sesquihydrate). A white or almost white powder. Freely soluble in water and in alcohol; practically insoluble in hexane. Protect from light.

Stability. A suspension of pantoprazole 2 mg/mL in sterile water and sodium bicarbonate was deemed to be physically and chemically stable[1] in amber polyethylene terephthalate bottles for 62 days at 2° to 8°.

1. Dentinger PJ, *et al.* Stability of pantoprazole in an extemporaneously compounded oral liquid. *Am J Health-Syst Pharm* 2002; **59:** 953–6.

Adverse Effects and Precautions

As for Omeprazole, p.1753. Dosage may need to be reduced in severe hepatic impairment; liver function should be monitored regularly, and therapy stopped if liver enzymes are elevated.

Incidence of adverse effects. In a postmarketing surveillance study of the 6-month period after the launch of pantoprazole in England (UK), the adverse effects reported most frequently were diarrhoea, nausea, and headache. Other effects included malaise or lassitude, rash, other gastrointestinal disturbances, myalgia, and oedema.[1]

1. Wilton LV, *et al.* The pharmacovigilance of pantoprazole: the results of postmarketing surveillance on 11 541 patients in England. *Drug Safety* 2003; **26:** 121–32.

Effects on the blood. For a report of thrombocytopenia with pantoprazole, see under Omeprazole, p.1753.

Effects on the kidneys. For reports of interstitial nephritis associated with pantoprazole see p.1753.

Effects on the skin. For mention of skin reactions to pantoprazole, see p.1754.

Interactions

As for Omeprazole, p.1755.

◊ For reference to a lack of effect of pantoprazole on diazepam, see Gastrointestinal Drugs, p.991, and for a lack of effect on theophylline, see p.1145. Licensed product information states that there are reports of increased prothrombin time in patients taking pantoprazole and warfarin, but for reports suggesting a lack of effect on warfarin, see p.1430. For a report of severe generalised myalgia and bone pain attributed to the use of methotrexate with pantoprazole, see Gastrointestinal Drugs, p.748.

Pharmacokinetics

Pantoprazole is rapidly absorbed and peak plasma-pantoprazole concentrations are achieved about 2 to 2.5 hours after an oral dose. The oral bioavailability is about 77% with the enteric-coated tablet formulation, and does not vary after single or multiple doses. Pantoprazole is about 98% bound to plasma proteins. It is extensively metabolised in the liver, primarily by the cytochrome P450 isoenzyme CYP2C19, to desmethylpantoprazole; small amounts are also metabolised by CYP3A4, CYP2D6, and CYP2C9. Metabolites are excreted mainly (about 80%) in the urine, with the remainder being excreted in faeces via the bile. The terminal elimination half-life is about 1 hour, and is prolonged in hepatic impairment; the half-life in patients with cirrhosis was 3 to 6 hours. Although the elimination half-life has been reported to be 3.5 to 10 hours in slow metabolisers (see also Metabolism under Omeprazole, p.1755), minimal accumulation occurs with once-daily dosing.

◊ References.

1. Pue MA, *et al.* Pharmacokinetics of pantoprazole following single intravenous and oral administration to healthy male subjects. *Eur J Clin Pharmacol* 1993; **44:** 575–8.

Bioavailability. A suspension of pantoprazole in sodium bicarbonate solution was rapidly absorbed, and peak plasma concentrations were comparable to that of the tablet. However, bioavailability of the suspension was about 25% lower than that of the tablet; the amount of sodium bicarbonate used may affect the bioavailability.[1]

1. Ferron GM, *et al.* Oral bioavailability of pantoprazole suspended in sodium bicarbonate solution. *Am J Health-Syst Pharm* 2003; **60:** 1324–9.

Uses and Administration

Pantoprazole is a proton pump inhibitor with actions and uses similar to those of omeprazole (p.1755). It is given as the sodium salt but doses are expressed in terms of the base. Pantoprazole sodium 11.28 mg is equivalent to about 10 mg of pantoprazole. Once-daily doses should be taken in the morning.

In the treatment of **gastro-oesophageal reflux disease** (p.1696), the usual oral dose is 20 to 40 mg once daily for 4 weeks, increased to 8 weeks if necessary; in the USA, up to 16 weeks of therapy is permitted for healing of erosive oesophagitis. For maintenance therapy, treatment can be continued with 20 to 40 mg daily. Alternatively, for recurring symptoms, an on-demand regimen of 20 mg daily may be given.

The usual dose for the treatment of **peptic ulcer disease** (p.1702) is 40 mg once daily. Treatment is usually given for 2 to 4 weeks for duodenal ulceration, or 4 to 8 weeks for benign gastric ulceration. For the eradication of *Helicobacter pylori* pantoprazole may be combined with two antibacterials in a 1-week **triple therapy** regimen. Effective regimens include pantoprazole 40 mg twice daily combined with clarithromycin 500 mg twice daily and amoxicillin 1 g twice daily, or combined with clarithromycin 250 mg twice daily and metronidazole 400 mg twice daily.

Patients who require prophylaxis for **NSAID-associated ulceration** may take 20 mg daily.

In the treatment of pathological hypersecretory states such as the **Zollinger-Ellison syndrome** (p.1704), the initial dose is 80 mg daily, adjusted as required. Doses of up to 240 mg daily have been used. Daily doses greater than 80 mg should be given in 2 divided doses.

PARENTERAL DOSAGE.

Pantoprazole may also be given intravenously, as the sodium salt, over 2 to 15 minutes, either as a slow injection or a short-term infusion. For peptic ulceration or gastro-oesophageal reflux disease, the recommended dose is 40 mg daily. A dose of 80 mg once or twice daily may be used for Zollinger-Ellison syndrome; up to 240 mg daily may be given in divided doses. Patients should be switched to oral therapy as soon as possible.

Doses of pantoprazole may need to be reduced in patients with hepatic impairment (see below).

◊ Reviews.

1. Anonymous. Pantoprazole—a third proton pump inhibitor. *Drug Ther Bull* 1997; **35:** 93–4.
2. Poole P. Pantoprazole. *Am J Health-Syst Pharm* 2001; **58:** 999–1008.
3. Cheer SM, *et al.* Pantoprazole: an update of its pharmacological properties and therapeutic use in the management of acid-related disorders. *Drugs* 2003; **63:** 101–32.
4. Gisbert JP, *et al.* Pantoprazole based therapies in Helicobacter pylori eradication: a systematic review and meta-analysis. *Eur J Gastroenterol Hepatol* 2004; **16:** 89–99.
5. Lehmann FS, Beglinger C. Role of pantoprazole in the treatment of gastro-oesophageal reflux disease. *Expert Opin Pharmacother* 2005; **6:** 93–104.

Administration. The safety and tolerability profiles of intravenous pantoprazole given in 10 mL of sodium chloride 0.9% over 2 minutes were similar to those given over 15 minutes in 100 mL.[1]

1. Micalizzi M, *et al.* Comparative tolerability of 2- and 15-minute intravenous infusions of pantoprazole. *Am J Health-Syst Pharm* 2007; **64:** 1822–6.

Administration in hepatic impairment. Dosage of pantoprazole may need to be reduced in severe hepatic impairment, or doses given only on alternate days. A maximum dose of 20 mg daily orally or intravenously, or 40 mg orally on alternate days, has been suggested. Doses above 40 mg daily have not been studied in patients with hepatic impairment. Liver enzymes should be monitored during therapy, and pantoprazole should be stopped if elevations occur.

Administration in renal impairment. Most studies have not found the pharmacokinetics of pantoprazole to be altered in patients with renal impairment[1] and licensed drug information in the UK and US generally does not recommend dosage adjustment in this group; however some UK sources, including the *BNF*, suggest that a maximum dose of 40 mg daily should be observed.

1. Cheer SM, *et al.* Pantoprazole: an update of its pharmacological properties and therapeutic use in the management of acid-related disorders. *Drugs* 2003; **63:** 101–132.

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Gastromax; Pangest; Pantocas; Pantop; Pantus; Peptazol; Sipar; Supracam; Ulserch†; Zurcal†; ***Austral.:*** Somac; ***Austria:*** Pantoloc; Zurcal; ***Belg.:*** Pantozol; Zurcale; ***Braz.:*** Gastropan; Noprop†; Pantocal; Pantopaz†; Pantozol; Pantrat; Peptovit†; Ziprol; Zurcal; ***Canad.:*** Panto; Pantoloc; ***Chile:*** Singastril†; Ulcemex; Zurcal; ***Cz.:*** Apo-Panto; Controloc; Nolpaza; Panogastin; ***Denm.:*** Pantoloc; ***Fin.:*** Somac; ***Fr.:*** Eupantol; Inipomp; ***Ger.:*** Pantozol; Pantozol-Rifun†; Rifun; ***Gr.:*** Controloc; Pantosec; Zurcazol; ***Hong Kong:*** Pantoloc; ***Hung.:*** Controloc; Nolpaza; Pantacid; Zimpax; ***India:*** Eracid†; Pantodac; Pantop; Pantosec; Pentaloc; Praize; ***Indon.:*** Pantozol; ***Irl.:*** Protium; ***Israel:*** Controloc; ***Ital.:*** Pantecta; Pantopan; Pantorc; Peptazol; ***Malaysia:*** Controloc; ***Mex.:*** Pantozol; Prazolan; Tecta; Zolpra; Zurcal; ***Neth.:*** Pantorc; Pantozol; ***Norw.:*** Somac; ***NZ:*** Somac; ***Philipp.:*** Pantoloc; Ulcepraz; ***Pol.:*** Controloc; ***Port.:*** Apton; Pantoc; Praoz; Zurcal; ***Rus.:*** Sunpraz (Санпраз); ***S.Afr.:*** Controloc; Pantocid; Pantoloc; Topzole; ***Singapore:*** Controloc; ***Spain:*** Anagastra; Pantecta; Pantocarm; Ulcotenal; ***Swed.:*** Pantoloc; ***Switz.:*** Pantozol; Zurcal; ***Thai.:*** Controloc; ***Turk.:*** Panthec; Panto; Pantpas; Pulcet; ***UK:*** Protium; ***USA:*** Protonix; ***Venez.:*** Pantop.

Multi-ingredient: ***Austral.:*** Somac-MA; ***Austria:*** Helipac; ***Ger.:*** ZacPac; ***India:*** Pantosec D; Praize-D; ***Malaysia:*** Klacid HP 7; ***Neth.:*** PantoPAC.

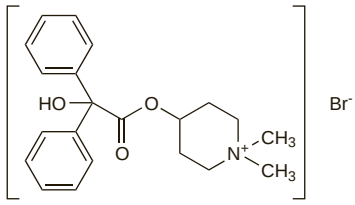
Parapenzolate Bromide *(USAN, rINN)*

Bromuro de parapenzolato; Parapenzolate, Bromure de; Parapenzolati Bromidum; Sch-3444. 4-Benziloyloxy-1,1-dimethylpiperidinium bromide.

Парапензолата Бромид

$C_{21}H_{26}BrNO_3$ = 420.3.

CAS — 5634-41-3.



Profile
Parapenzolate bromide is a quaternary ammonium antimuscarinic that has been used for the relief of visceral spasms.

Preparations
Proprietary Preparations (details are given in Part 3)

Multi-ingredient: ***Chile:*** Tranvagal†.

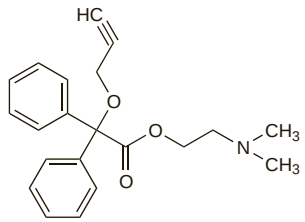
Pargeverine Hydrochloride *(rINNM)*

Pargeverina, hidrocloruro de; Pargévérine, Chlorhydrate de; Pargeverini Hydrochloridum; Propinox Hydrochloride. 2-(Dimethylamino)ethyldiphenyl(2-propynyloxy)acetate hydrochloride.

Паргеверина Гидрохлорид

$C_{21}H_{23}NO_3$,HCl = 373.9.

CAS — 13479-13-5 (pargeverine); 2765-97-1 (pargeverine hydrochloride).



(pargeverine)

Profile
Pargeverine is reported to possess antimuscarinic and smooth-muscle relaxant properties and has been used in the treatment of gastrointestinal and smooth muscle spasm.

Preparations
Proprietary Preparations (details are given in Part 3)

Arg.: Nova Paratopina; Pasmosedan†; Sertal; ***Chile:*** Bevitex; Bramedil; Pasmocalm†; Viadil; Viplan; Viproxil; ***Mex.:*** Bipasmin; Plidan; ***Port.:*** Vagopax; ***Venez.:*** Plidan.

Multi-ingredient: ***Arg.:*** Apasmo Compuesto; Binvex; Espasmo Dolex; Nova Paratropina Compositum; Pasmosedan Compuesto†; Propalgin; Sertal Compuesto; ***Chile:*** Bramedil Compuesto; Scopanil; Viadil Compuesto; Viplan Compuesto; Viproxil Compuesto; ***Mex.:*** Firac Plus; Plidan Compuesto; ***Venez.:*** Dologinex; Plidan Compuesto.

Pentaerythritol

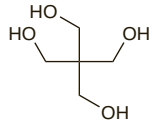
Pentaeritritol; Tetramethylolmethane. 2,2-Bis(hydroxymethyl)propane-1,3-diol.

Пентаэритритол

$C_5H_{12}O_4$ = 136.1.

CAS — 115-77-5.

ATC Vet — QA06AD14.



Profile
Pentaerythritol is an osmotic laxative used in the treatment of constipation (p.1693) in oral doses of 5 to 15 g daily.

Preparations
Proprietary Preparations (details are given in Part 3)

Fr.: Auxitrans; Hydrafuca†.

Peppermint Leaf

Black Mint; Borsosmentalevél; Hoja de Menta; Hortelã-Pimenta; Liść mięty pieprzowej; List máty peprné; Menta piperita, hoja de; Menth. Pip.; Mentha Piperita; Menthae piperitae folium; Menthe Poivrée; Menthe poivrée, feuille de; Pepparmyntblad; Peppermint; Pfefferminzblätter; Piparmintunlehti; Pipirmėčių lapai; White Mint.

Листья Мяты Перечной

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

Ph. Eur. 6.2 (Peppermint Leaf). The whole or cut dried leaves of *Mentha* × *piperita*, containing not less than 1.2% v/w of essential oil if whole, or not less than 0.9% v/w if cut. It has a characteristic and penetrating odour and a characteristic aromatic taste. Protect from light.

USNF 26 (Peppermint). The dried leaf and flowering top of *Mentha piperita* (Labiatae). It has an aromatic, characteristic odour and a pungent taste, and produces a cooling sensation in the mouth.

Peppermint Oil

Borsosmentaolaj; Essence de Menthe Poivrée; Essência de Hortelã-Pimenta; Menta piperita, aceite esencial de; Menthae piperitae aetheroleum; Menthae Piperitae Etheroleum; Menthe poivrée, huile essentielle de; Nane Yağı; Ol. Menth. Pip.; Olejek miętowy; Oleum Menthae Piperitae; Pepparmyntolja; Pfefferminzöl; Piparminttuöljy; Pipirmėčių eterinis aliejus; Silice máty peprné.

Масло Мяты Перечной

CAS — 8006-90-4.

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

Ph. Eur. 6.2 (Peppermint Oil). It is obtained by steam distillation from the fresh overground parts of the flowering plant of *Mentha* × *piperita*. It contains 30.0 to 55.0% menthol, 14.0 to 32.0% menthone, and 2.8 to 10.0% menthyl acetate, 3.5 to 14.0% cineole, 1.5 to 10.0% isomenthone, 1.0 to 9.0% menthofuran, 1.0 to 5.0% limonene, not more than 4.0% pulegone, and not more than 1.0% carvone; the ratio of eucalyptol content to limonene content is greater than two.
It is a colourless, pale yellow, or pale greenish-yellow liquid with a characteristic odour and taste followed by a sensation of cold. Miscible with alcohol and with dichloromethane. Store in well-filled, airtight containers. Protect from light and heat.

USNF 26 (Peppermint Oil). The volatile oil distilled with steam from the fresh overground parts of the flowering plant *Mentha piperita* (Labiatae), rectified by distillation, and neither partially nor wholly dementholised. It yields not less than 5% of esters calculated as menthyl acetate and not less than 50% of total menthol, free and as esters.
It is a colourless or pale yellow liquid with a strong, penetrating, characteristic odour and a pungent taste, followed by a sensation of cold when air is drawn into the mouth. Soluble 1 in 3 of alcohol (70%) with not more than slight opalescence. Store in airtight containers at a temperature not exceeding 40°.

Storage. The Pharmaceutical Society of Great Britain's Department of Pharmaceutical Sciences found that PVC bottles softened and distorted fairly rapidly in the presence of peppermint oil, which should not be stored or dispensed in such bottles.[1]

1. Department of Pharmaceutical Sciences of the Pharmaceutical Society of Great Britain. Plastic medicine bottles of rigid PVC. *Pharm J* 1973; **210:** 100.

Adverse Effects and Precautions
Peppermint oil can be irritant and may rarely cause hypersensitivity reactions. Reported reactions include erythematous skin rash, headache, bradycardia, muscle tremor, and ataxia. Heartburn has also been reported.

Effects on the cardiovascular system. Idiopathic atrial fibrillation occurred in 2 patients addicted to 'peppermints'. Normal rhythm was restored when peppermint-sucking ceased.[1]

1. Thomas JG. Peppermint fibrillation. *Lancet* 1962; **i:** 222.

Hypersensitivity. Exacerbation of asthma, with wheezing and dyspnoea, was associated with the use of paste-based toothpastes containing peppermint or wintergreen as a flavouring.[1]

1. Spurlock BW, Dailey TM. Shortness of (fresh) breath—toothpaste-induced bronchospasm. *N Engl J Med* 1990; **323:** 1845–6.

Interactions
Adverse effects may be more likely if peppermint oil is taken with alcohol. Enteric-coated capsules containing peppermint oil should not be taken immediately after food or with antacids. There is some evidence that peppermint oil can inhibit the cytochrome P450 isoenzyme CYP3A4, and may affect the clearance of drugs whose metabolism is mediated by this enzyme.

◊ References.

1. Dresser GK, *et al.* Evaluation of peppermint oil and ascorbyl palmitate as inhibitors of cytochrome P4503A4 activity in vitro and in vivo. *Clin Pharmacol Ther* 2002; **72:** 247–55.

Uses and Administration
Peppermint oil is an aromatic carminative that relaxes gastrointestinal smooth muscle and relieves flatulence and colic. Enteric-coated capsules containing peppermint oil are used for the relief of symptoms of the irritable bowel syndrome or gastrointestinal spasm secondary to other disorders. Usual oral doses in adults and adolescents from the age of 15 years are 0.2 mL three times daily, (increased to 0.4 mL three times daily if necessary) for up to 2 to 3 months. The capsules should be taken half to one hour before food and swallowed whole, not chewed.

Peppermint oil is used as a flavour and with other volatile agents in preparations for respiratory-tract disorders. It is also used in aromatherapy.

Peppermint leaf, the source of the oil, has also been used for its carminative and flavouring properties.

Gastrointestinal disorders. Menthol (p.2340), the major constituent of peppermint oil, has properties similar to those of calcium-channel blockers on smooth muscle such as that in the human gut.[1] Reviews[2,3] of the use of peppermint oil in irritable bowel syndrome (p.1699) concluded that there was some evidence of its benefit.

The relaxant effect of peppermint oil on the gastrointestinal tract has been used to reduce spasm during endoscopy by giving solubilised peppermint oil directly into the lumen, through the accessory channel of the endoscope. It has been described as effective during colonoscopy[4] and may be more effective than intramuscular hyoscine butylbromide during upper gastrointestinal endoscopy.[5] Addition of peppermint oil to barium enema has also been tried and appears to reduce spasm[6,7] and the need for intravenous antispasmodics.[6]

1. Grigoleit H-G, Grigoleit P. Pharmacology and preclinical pharmacokinetics of peppermint oil. *Phytomedicine* 2005; **12:** 612–16.
2. Pittler MH, Ernst E. Peppermint oil for irritable bowel syndrome: a critical review and metaanalysis. *Am J Gastroenterol* 1998; **93:** 1131–5.
3. Grigoleit H-G, Grigoleit P. Peppermint oil in irritable bowel syndrome. *Phytomedicine* 2005; **12:** 601–6.
4. Asao T, *et al.* An easy method for the intraluminal administration of peppermint oil before colonoscopy and its effectiveness in reducing colonic spasm. *Gastrointest Endosc* 2001; **53:** 172–7.
5. Hiki N, *et al.* Peppermint oil reduces gastric spasm during upper endoscopy: a randomized, double-blind, double-dummy controlled trial. *Gastrointest Endosc* 2003; **57:** 475–82.
6. Sparks MJW, *et al.* Does peppermint oil relieve spasm during barium enema? *Br J Radiol* 1995; **68:** 841–3.
7. Asao T, *et al.* Spasmolytic effect of peppermint oil in barium during double-contrast barium enema compared with Buscopan. *Clin Radiol* 2003; **58:** 301–5.

Preparations
BP 2008: Concentrated Peppermint Emulsion; Gastro-resistant Peppermint Oil Capsules; Peppermint Spirit;
USNF 26: Peppermint Water;
USP 31: Peppermint Spirit.

Proprietary Preparations (details are given in Part 3)

Austral.: Mintec; ***Austria:*** Colpermin; ***Cz.:*** China-Oel†; Colpermin; Gallenteе†; Ki-Min-To†; Mata Pieporna†; Matovy; Nat Maty Peprne; ***Fr.:*** Locabiotal; ***Ger.:*** Chiana†; China-Oel†; Euminz; Inspirol Heilpflanzenol; Medacalm; Mentacur†; spasmo gallo sanol N; Wildkrauterol special K; ***Gr.:*** Colpermin; ***Hong Kong:*** Colpermin; ***Irl.:*** Colpermin; ***Israel:*** China Oel; Colpermin; Po Sum On Medicated Oil; ***Ital.:*** Carmint; Mintoil; ***Mex.:*** Colpermin†; ***NZ:*** Mintec; ***Port.:*** Colomínte; ***S.Afr.:*** Pepermentdruppels; ***Singapore:*** Colpermin; ***Switz.:*** Chiana-Oel; Colpermin; ***Thai.:*** Colpermin; ***Turk.:*** China Oel; Colpermin; ***UK:*** Colpermin; Equilon Herbal; Mintec; Obbekjaers.

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

Phenamazide Hydrochloride

Fenamazida, hidrocloruro de; Phenamacide Hydrochloride. (±)-α-Aminobenzeneacetic acid 3-methylbutyl ester hydrochloride.

$C_{13}H_{19}NO_2$,HCl = 257.8.

CAS — 84580-27-8 (phenamazide); 31031-74-0 (phenamazide hydrochloride).

Profile
Phenamazide is an antimuscarinic with actions similar to those of atropine (p.1219). It has been used as the hydrochloride in the treatment of visceral spasms.

Preparations
Proprietary Preparations (details are given in Part 3)

Ger.: Aklonin†.