These effects were explained by inhibition of the renal tubular secretion of famotidine by probenecid.

1. Inotsume N, *et al.* The inhibitory effect of probenecid on renal excretion of famotidine in young, healthy volunteers. *J Clin Pharmacol* 1990; **30:** 50–6.

Theophylline. Although famotidine is considered not to interfere with the metabolism of other drugs there is a report of a clinically significant interaction with theophylline—see p.1145.

Pharmacokinetics

Famotidine is readily but incompletely absorbed from the gastrointestinal tract with peak concentrations in plasma occurring 1 to 3 hours after oral doses. The bioavailability of oral famotidine is about 40 to 45% and is not significantly affected by the presence of food.

The elimination half-life from plasma is reported to be about 3 hours and is prolonged in renal impairment. Famotidine is weakly bound, about 15 to 20%, to plasma proteins. A small proportion of famotidine is metabolised in the liver to famotidine *S*-oxide. About 25 to 30% of an oral dose, and 65 to 70% of an intravenous dose, is excreted unchanged in the urine in 24 hours, primarily by active tubular secretion. Famotidine is also found in breast milk.

◊ Reviews.

1. Echizen H, Ishizaki T. Clinical pharmacokinetics of famotidine. *Clin Pharmacokinet* 1991; **21:** 178–94.

Children. Famotidine 300 micrograms/kg intravenously was given to 10 children aged 2 to 7 years, after cardiac surgery and before extubation, to prevent aspiration.[1] This dose (equivalent to about 20 mg in adults) induced a rise in the intragastric pH within 1 hour of being given and the pH remained above 3.5 for about 9 hours. The mean elimination half-life was 3.3 hours, similar to the value in healthy adults and it was considered that doses in children need therefore only be adjusted according to bodyweight and renal function. This conclusion was supported by a review of 8 studies in children over 1 year of age.[2] Conversely, in infants aged 5 to 19 days, the mean elimination half-life was prolonged (10.5 hours) secondary to reduced renal clearance.[3] This was confirmed by another study,[4] which indicated that reduced clearance was found in infants under 3 months of age, but that pharmacokinetics in older infants were similar to those previously reported for children and adults.

1. Kraus G, *et al.* Famotidine: pharmacokinetic properties and suppression of acid secretion in paediatric patients following cardiac surgery. *Clin Pharmacokinet* 1990; **18:** 77–81.
2. James LP, Kearns GL. Pharmacokinetics and pharmacodynamics of famotidine in paediatric patients. *Clin Pharmacokinet* 1996; **31:** 103–10.
3. James LP, *et al.* Pharmacokinetics and pharmacodynamics of famotidine in infants. *J Clin Pharmacol* 1998; **38:** 1089–95. Correction. *ibid.* 2000; **40:** 1298.
4. Wenning LA, *et al.* Pharmacokinetics of famotidine in infants. *Clin Pharmacokinet* 2005; **44:** 395–406.

Distribution into breast milk. The peak concentration of famotidine in breast milk, which occurred in 8 women 6 hours after an oral dose of 40 mg, was similar to the peak plasma concentration which occurred 2 hours after the dose.[1]

1. Courtney TP, *et al.* Excretion of famotidine in breast milk. *Br J Clin Pharmacol* 1988; **26:** 639P.

Enterohepatic recirculation. Some individuals have a second peak in the plasma concentration of famotidine, which could be due to enterohepatic recirculation. However, a maximum of 0.43% of a dose of famotidine was excreted in the bile of 2 patients following single doses of 20 mg intravenously or 40 mg by mouth indicating that significant recirculation had not occurred.[1]

1. Klotz U, Walker S. Biliary excretion of H -receptor antagonists. *Eur J Clin Pharmacol* 1990; **39:** 91–2.

Uses and Administration

Famotidine is a histamine H_2-antagonist with actions and uses similar to those of cimetidine (see p.1719).

Famotidine may be given orally or intravenously.

In the management of benign **gastric** and **duodenal ulceration** (p.1702) the dose is 40 mg daily orally at bedtime, for 4 to 8 weeks. A dose of 20 mg twice daily has also been given. A maintenance dose of 20 mg at bedtime may be given to prevent recurrence of duodenal ulceration. In **gastro-oesophageal reflux disease** (p.1696) the recommended oral dose is 20 mg twice daily for 6 to 12 weeks, or up to 40 mg twice daily if there is oesophageal ulceration. A maintenance dose of 20 mg twice daily may be given to prevent recurrence. For the short-term symptomatic relief of heartburn or non-ulcer **dyspepsia** (p.1695) a dose of 10 mg up to twice daily is suggested. In the **Zollinger-Ellison syndrome** (p.1704) the initial oral dose is 20 mg every 6 hours, increased as necessary; doses up to 800 mg daily have been used.

The usual dose of famotidine by the intravenous route is 20 mg and may be given by injection over at least 2 minutes or as an infusion over 15 to 30 minutes; the dose may be repeated every 12 hours.

Doses of famotidine should be reduced in patients with renal impairment (see below).

Administration. Although famotidine is most usually given as a film-coated tablet, an alternative wafer formulation, designed to dissolve on the tongue without the need for water, has also been developed.[1]

Parenteral formulations of famotidine are also available in some countries. Although licensed product information recommends that intravenous injections be given over at least 2 minutes, a study that compared rapid intravenous injection (over up to 1 minute) with slow intravenous infusion found both to be safe.[2] Continuous infusion has however been reported by others[3] to be more effective in the prevention of stress ulceration than bolus injection.

1. Schwartz JI, *et al.* Novel oral medication delivery system for famotidine. *J Clin Pharmacol* 1995; **35:** 362–7.
2. Fish DN. Safety and cost of rapid iv injection of famotidine in critically ill patients. *Am J Health-Syst Pharm* 1995; **52:** 1889–94.
3. Baghaie AA, *et al.* Comparison of the effect of intermittent administration and continuous infusion of famotidine on gastric pH in critically ill patients: results of a prospective, randomized, crossover study. *Crit Care Med* 1995; **23:** 687–91.

Administration in renal impairment. The dosage of famotidine should be reduced in patients with renal impairment. In the UK, a 50% reduction is suggested for patients whose creatinine clearance is less than 10 mL/minute; in the USA this reduction is recommended in all those with creatinine clearance less than 50 mL/minute. Alternatively, the dosage interval may be prolonged to 36 to 48 hours.

Immunomodulation. *MALIGNANT NEOPLASMS.* References[1-3] to the use of adjuvant famotidine in patients with malignant neoplasms, including use with interleukin-2 infusions.[2,3]

1. Parshad R, *et al.* Effect of preoperative short course famotidine on TILs and survival in breast cancer. *Indian J Cancer* 2005; **42:** 185–90.
2. Quan WD, *et al.* Continuous infusion interleukin-2 and famotidine in metastatic kidney cancer. *Cancer Biother Radiopharm* 2006; **21:** 515–19.
3. Quan WD, *et al.* Continuous infusion interleukin-2 and intravenous famotidine in metastatic melanoma. *Cancer Biother Radiopharm* 2006; **21:** 607–12.

Schizophrenia. There are reports of improvement in schizophrenic symptoms (p.955) in patients given famotidine.[1-4]

1. Kaminsky R, *et al.* Effect of famotidine on deficit symptoms of schizophrenia. *Lancet* 1990; **335:** 1351–2.
2. Rosse RB, *et al.* Famotidine adjunctive pharmacotherapy of schizophrenia: a case report. *Clin Neuropharmacol* 1995; **18:** 369–74.
3. Rosse RB, *et al.* An open-label study of the therapeutic efficacy of high-dose famotidine adjuvant pharmacotherapy in schizophrenia: preliminary evidence for treatment efficacy. *Clin Neuropharmacol* 1996; **19:** 341–8.
4. Martinez MC. Famotidine in the management of schizophrenia. *Ann Pharmacother* 1999; **33:** 742–7.

Preparations

BP 2008: Famotidine Tablets;
USP 31: Famotidine for Oral Suspension; Famotidine Injection; Famotidine Tablets.

Proprietary Preparations (details are given in Part 3)
Arg.: Ulcelac; ***Austral.:*** Amfamox†; Ausfam; Famohexal; Pamacid; Pepcid†; Pepcidine; Pepzan; ***Austria:*** Eradix; Famohexal; Famosin; Pepcid; Sodexx Famotidine; Tetacid; Ulcusan; ***Belg.:*** Pepcidine†; ***Braz.:*** Famodine†; Famoset; Famotid; Famotil†; Famox; Famoxil†; ***Canad.:*** Acid Control; Acid Halt; Maalox H Acid Controller; Pepcid; Peptic Guard; Ulcidine†; ***Chile:*** Anulbet†; Fibonel†; Gastrium; ***Cz.:*** Famosan; Quamatel; Ulceran†; Ulfamid; ***Denm.:*** Pepcidin†; ***Fin.:*** Pepcid; Pepcidin; ***Fr.:*** Pepcidac; Pepdine; ***Ger.:*** Fadul; Famo; Famobeta; Famonerton; Pepcid†; Pepdul; ***Gr.:*** Ansilan; Banatin; Cepal†; Esseldon; Gasterogen; Imposergon; Mostrelan; Panalba; Peptan; Rosagenus; Sedanium-R; Vexurat; ***Hong Kong:*** Ausfam; Beilande; Fadine; Famine; Famocid; Famodine; Famolta; Famopsin; Famotin; Famox; Gastrodomina; LAfamo; Marmodine; Motidine; Pepcidine; Phyzidine; Quamatel; Servipep†; Ulceran†; Vida Famodine; ***Hung.:*** Motidin; Peptigal†; Quamatel; Servipep†; ***India:*** Blocacid†; Fadine; Famodin; Famonite; Famowal; Famtac; Fudone; Ulcimax; ***Indon.:*** Antidine; Corocyd; Denufam; Faberdin; Facid; Famocid; Fluktan; Gasfamin; Gaster; Gestofam; Ifamul; Interfam; Lexmodine; Nulcefam; Pompaton; Promocid; Purifam; Regastin; Renapepsa; Tismafam; Ulcerid; Ulfam; Ulmo; ***Irl.:*** Pepcid; ***Israel:*** Apogastine; Famo; Gastro; Rogasti; Zarex†; ***Ital.:*** Famodil; Gastridin; Motiax; ***Jpn:*** Gaster; ***Malaysia:*** Acidine†; Fadine†; Famopsin; Pepcidine; Pepzan; Ulceran; Voker; ***Mex.:*** Adiatin; Amofat†; Androtin; Durater; Eufatin†; Fabutin; Fagatrim†; Famoxal; Fatoril†; Fawodin†; Ludex; Pepcidine; Sertidine; Sigafam†; Ultidin; ***Neth.:*** Pepcid; Pepcidin; ***Norw.:*** Famotal; Pepcid; Pepcidin; ***NZ:*** Famox; Pepcid†; Pepcidine†; Pepzan; ***Philipp.:*** Famorila; Famtine; H2 Bloc; Hista-Bloc; Motid; Pepcidine; Ulcefam; ***Pol.:*** Famidyna; Famogast; Quamatel; Ulfamid; ***Port.:*** Digeslit†; Dinul; Dipsin; Fatidin; Gastopride†; Gastrifam†; Lasa; Mensoma; Nulceran†; Pepcidina; ***Rus.:*** Famocid (Фамоцид); Famonit (Фамонит); Famosan (Фамосан); Gastrosidin (Гастросидин); Quamatel (Квамател); Ulceran (Ульцеран); Ulfamid (Ульфамид); ***Singapore:*** Blocacid†; Famoc; Famopril; Famopsin†; Famotin; Famox†; Motidine; Pepcidine; Pepzan; Ulceran; ***Spain:*** Brolin†; Confobos; Cronol; Digervin; Dispromil†; Eviantrina; Fagastril; Famokey; Famulcer; Fanosin†; Fanox†; Gastenin; Gastrion; Gastrodomina; Gastropen†; Ingastri; Invigan; Nos†; Nulcerin; Pepcid; Rubacina; Tairal; Tamin; Tipodex; Ulcetrax†; Ulgarine; Vagostal; ***Swed.:*** Pepcid; Pepcidin; ***Switz.:*** Pepcid†; Pepcidine†; ***Thai.:*** Agufam; Fadine†; Famoc; Famocid†; Famonox; Famopsin; Famosia; Famotab; Famotin†; Fasidine; Motidine; Pepcidine; Pepcine; Pepdenal; Pepfamin; Peptoci; Pepzan†; Pharmotidine†; Ulceran; Ulcofam†; Ulfamet; ***Turk.:*** Duovel; Famec; Famo; Famodin; Famogast; Famoser; Famotep; Famotsan; Gasterol; Gastifam; Gastrofam; Gastrosidin; Neotab; Nevofam; Notidin; Pepdif; ***UAE:*** Famotec; ***UK:*** Pepcid; Ultra Heartburn Relief; ***USA:*** Mylanta AR Acid Reducer†; Pepcid; ***Venez.:*** Dinamot; Fadipina†; Famogel; Famulcer; Isomina; Klinotal; Medalin; Neutracid; Pepcidine†; Ulcenol.

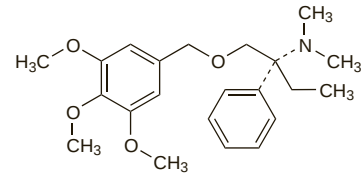
Multi-ingredient: ***Arg.:*** Actual; Megalex Antiacido; Mylanta Extra; ***Canad.:*** Pepcid Complete; ***Fin.:*** Pepcid Duo; ***Fr.:*** Pepcidduo; ***Ger.:*** Pepciddual; ***Indon.:*** Neosanmag Fast; Promag Double Action; ***Ital.:*** Pepciddual; ***Mex.:*** Facidex Total; ***Norw.:*** Pepcidduo; ***Spain:*** Pepdual; ***Swed.:*** Pepcid Duo; ***UK:*** Pepcidtwo; ***USA:*** Pepcid Complete.

Fedotozine *(rINN)*

Fedotozina; Fédotozine; Fedotozinum; JO-1196 (tartrate). (+)-(*R*)-α-Ethyl-*N*,*N*-dimethyl-α-{[(3,4,5-trimethoxybenzyl)oxy]methyl}benzylamine.

Федотозин

$C_{22}H_{31}NO_4$ = 373.5.
CAS — 123618-00-8 (fedotozine); 133267-27-3 (fedotozine tartrate).



Profile

Fedotozine is a peripherally acting selective agonist of opioid κ-receptors that has been investigated in dyspepsia and the irritable bowel syndrome.

◊ References.

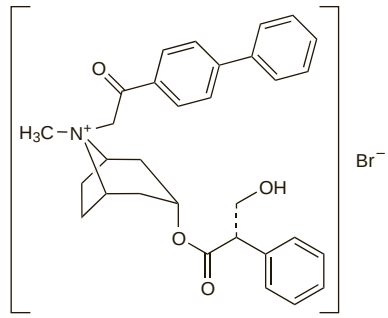
1. Delvaux M. Pharmacology and clinical experience with fedotozine. *Expert Opin Invest Drugs* 2001; **10:** 97–110.

Fentonium Bromide *(rINN)*

Bromuro de fentonio; Fa-402; Fentonii Bromidum; Fentonium, Bromure de; Ketoscilium; *N*-(4-Phenylphenacyl)-1-hyoscyaminium Bromide; Z-326. (−)-(1*R*,3*r*,5*S*)-8-(4-Phenylphenacyl)-3-[(*S*)-tropoyloxy]tropanium bromide.

Фентония Бромид

$C_{31}H_{34}BrNO_4$ = 564.5.
CAS — 5868-06-4.
ATC — A03BB04.
ATC Vet — QA03BB04.



Profile

Fentonium bromide is a quaternary ammonium antimuscarinic with peripheral effects similar to those of atropine (p.1219). It has been used to relieve visceral spasms.

Fig

Carica; Ficus; Higo.

Инжир; Фикус

Pharmacopoeias. In *Br.* and *Swiss*.
BP 2008 (Fig). The sun-dried succulent fruit of *Ficus carica* containing not less than 60.0% of water-soluble extractive. Store in a dry place.

Profile

Fig is a mild laxative and demulcent usually used with other laxatives.

Effects on the skin. Skin reactions and photodermatitis have followed application of home-made decoctions of fig leaves to the skin.[1,2]

1. Ozdamar E, *et al.* An unusual cause of burn injury: fig leaf decoction used as a remedy for a dermatitis of unknown etiology. *J Burn Care Rehabil* 2003; **24:** 229–33.
2. Bassioukas K, *et al.* Erythrodermic phytophotodermatitis after application of aqueous fig-leaf extract as an artificial suntan promoter and sunbathing. *Contact Dermatitis* 2004; **51:** 94–5.

Preparations

Proprietary Preparations (details are given in Part 3)

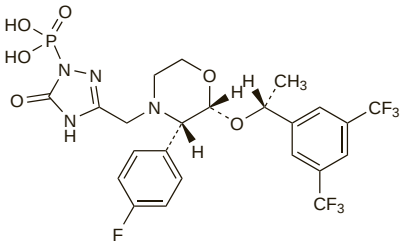
Multi-ingredient: ***Austria:*** Carilax; Frugelletten; Herbelax; Neda Fruchtewurfel; ***Braz.:*** Bilifel†; ***Denm.:*** Figen; ***Fr.:*** Carres Parapsyllium; Preservation; ***Ger.:*** florabio Mann-Feigen-Sirup mit Senna†; florabio Manna-Feigen; ***Switz.:*** Agarol Soft; Dragees aux figues avec du sene; Fruttasan; Pursana; Valverde Constipation dragees; Valverde Constipation sirop; ***UK:*** Califig.

Fosaprepitant *(rINN)*

Fosaprépitant; Fosaprepitantum. {3-[((2*R*,3*S*)-2-{(1*R*)-1-[3,5-bis(Trifluoromethyl)phenyl]ethoxy}-3-(4-fluorophenyl)morpholin-4-yl)methyl]-5-oxo-4,5-dihydro-1*H*-1,2,4-triazol-1-yl}phosphonic acid.

Фозапрепитант

$C_{23}H_{22}F_7N_4O_6P$ = 614.4.
CAS — 172673-20-0.



Fosaprepitant Meglumine *(rINNM)*

Fosaprepitant Dimeglumine; Fosaprepitant meglumina; Fosaprépitant Méglumine; Meglumini Fosaprepitantum; MK-0517. 1-Deoxy-1-(methylamino)-D-glucitol {3-[((2*R*,3*S*)-2-{(1*R*)-1-[3,5-bis(trifluoromethyl)phenyl]ethoxy}-3-(4-fluorophenyl)-4-morpholinyl)methyl]- 2,5-dihydro-5-oxo-1*H*-1,2,4-triazol-1-yl}phosphonate.

Меглумина Фозапрепитант

$C_{23}H_{22}F_7N_4O_6P$, $2C_7H_{17}NO_5$ = 1004.8.
CAS — 265121-04-8.

Stability. US licensed product information states that, once reconstituted and diluted as directed in sodium chloride 0.9%, a solution of fosaprepitant meglumine is stable for 24 hours at room temperature (at or below 25°).

Adverse Effects and Precautions
As for Aprepitant, p.1708.

Interactions
As for Aprepitant, p.1708.

Pharmacokinetics
Fosaprepitant is rapidly converted to aprepitant; for the pharmacokinetics of aprepitant, see p.1708.

Uses and Administration
Fosaprepitant is a prodrug of the antiemetic aprepitant (p.1708), which is a neurokinin-1 receptor antagonist. Fosaprepitant meglumine is used for the prevention of acute and delayed nausea and vomiting associated with highly emetogenic or moderately emetogenic cancer chemotherapy. Doses are expressed in terms of the base; 188 mg of fosaprepitant meglumine is equivalent to about 115 mg of fosaprepitant. A dose of fosaprepitant meglumine equivalent to 115 mg fosaprepitant may be given intravenously instead of oral aprepitant, with a corticosteroid and a 5-HT_3 antagonist (for details, see Administration, under Aprepitant, p.1709). The reconstituted dose of fosaprepitant is diluted in 110 mL of sodium chloride 0.9% to a final concentration of 1 mg/mL and infused over 15 minutes.

◊ References.

1. Navari RM. Fosaprepitant (MK-0517): a neurokinin-1 receptor antagonist for the prevention of chemotherapy-induced nausea and vomiting. *Expert Opin Invest Drugs* 2007; **16:** 1977–85.

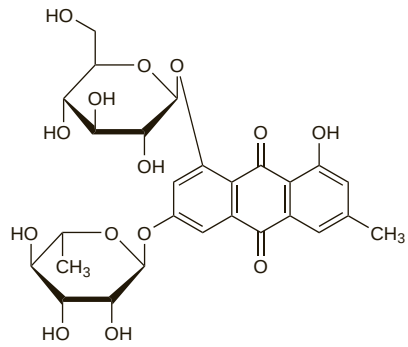
Preparations

Proprietary Preparations (details are given in Part 3)
Cz.: Ivemend; ***Port.:*** Ivemend; ***UK:*** Ivemend; ***USA:*** Emend.

Frangula Bark

Alder Buckthorn Bark; Amieiro Negro; Bourdaine; Faulbaumrinde; Frángula, corteza de; Frangulabark; Frangulae cortex; Kora kruszyny; Krušinová kůra; Kutyabengekéreg; Paatsamankuori; Rhamni Frangulae Cortex; Šaltekšnių žievė.

Кора Крушины
CAS — 8057-57-6 (frangula extract).



(glucofrangulin A)

NOTE. The name Buckthorn Bark has also been used; distinguish Frangula Bark from Buckthorn (p.1713) and from Sea Buckthorn (p.2384).

Pharmacopoeias. In *Eur.* (see p.vii).
Ph. Eur. 6.2 (Frangula Bark). The dried, whole or fragmented bark of the stems and branches of *Rhamnus frangula* (=*Frangula alnus*). It contains not less than 7.0% of glucofrangulins, expressed as glucofrangulin A ($C_{27}H_{30}O_{14}$ = 578.5) and calculated with reference to the dried drug. Protect from light.

Profile
Frangula bark is an anthraquinone stimulant laxative with actions and uses similar to those of senna (p.1769).

Homoeopathy. Frangula bark has been used in homoeopathic medicines under the following names: Frangula; Rhamnus frangula; Rham. fr.

Preparations

Ph. Eur.: Frangula Bark Dry Extract, Standardised.

Proprietary Preparations (details are given in Part 3)
Fr.: Depuratif des Alpes; ***Switz.:*** Arkocaps†; Elixir frangulae compositum.

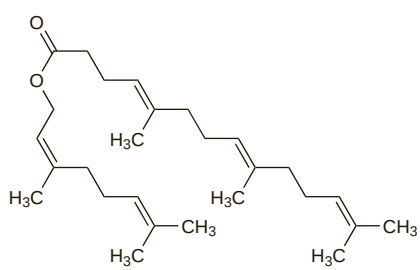
Multi-ingredient: ***Austral.:*** Granocol†; Normacol Plus; ***Austria:*** Abfuhrtee†; Artin; Dragees Neunzehn†; Gallesyn; Laxalpin; Laxolind; Mag Kottas Krauterexpress Abfuhrtee; Mag Kottas May-Cur-Tee; Planta Lax; Waldheim Abfuhrdragees mild; ***Belg.:*** Depuratif des Alpes; Grains de Vals; Normacol Plus†; ***Canad.:*** Extra Strong Formula 12†; Herbal Laxative; Herbalax†; ***Cz.:*** Abdomilon†; Abfuhr-Heilkrautertee†; Cholagol; Reduktan; The Salvat; ***Denm.:*** Ferroplex-frangula; ***Fr.:*** Dragees Fuca; Dragees Vegetales Rex; Mediflor Tisane Antirhumatismale No 2; Mediflor Tisane Circulation du Sang No 12; Normacol a la Bourdaine†; Tonilax; ***Ger.:*** Heumann Abfurhtee Solubilax N†; Hevertolax duo†; ***Hong Kong:*** Hepatofalk; Normacol Plus; ***Hung.:*** Cholagol; ***India:*** Kanormal; ***Irl.:*** Normacol Plus; ***Israel:*** Encypalmed; Rekiv; ***Ital.:*** Draverex; Fave di Fuca; Frangulina†; Lactolas; Neoform†; ***Mex.:*** Normacol†; ***Neth.:*** Roteroblong Maagtabletten; ***NZ:*** Granocol; Normacol Plus; ***Pol.:*** Alax; Cholavisol; Cholesol; Gastro; Laxantol; Rhelax; Senalax K; Tabletki Przeciw Niestrawnosci; Tabulettae Laxantes; ***Port.:*** Normacol Plus; ***S.Afr.:*** Normacol Plus; ***Singapore:*** Normacol Plus; ***Spain:*** Normacol Forte; ***Switz.:*** Colosan plus; Lapidar 10; Linoforce; LinoMed; Normacol avec bourdaine nouvelle formule†; Padma-Lax; Padmed Laxan; Phyto-Laxia; Phytolaxin; ***UK:*** Herbulax; Lustys Herbalene; Natravene; Normacol Plus.

Gefarnate *(BAN, rINN)*

DA-688; Géfarnate; Gefarnato; Gefarnatum; Geranyl Farnesylacetate. A mixture of stereoisomers of 3,7-dimethylocta-2,6-dienyl 5,9,13-trimethyltetradeca-4,8,12-trienoate.

Гефарнат

$C_{27}H_{44}O_2$ = 400.6.
CAS — 51-77-4.
ATC — A02BX07.
ATC Vet — QA02BX07.



Profile
Gefarnate is a cytoprotective that has been used in the treatment of peptic ulcer disease and gastritis. An ophthalmic preparation is under investigation for the treatment of corneal and conjunctival epithelial disorders.

Ginger

Gengibre; Gingembre; Gyömbér gyökértörzs; Imbierų šakniastiebiai; Ingefära; Ingwer; Inkivääri; Jengibre; Zázvorový oddenek; Zingib.; Zingiber; Zingiberis rhizoma.

Имбирь

Pharmacopoeias. In *Chin.*, *Eur.* (see p.vii), *Jpn*, and *US*. *US* also includes the powdered form.
Ph. Eur. 6.2 (Ginger). The dried, whole or cut rhizome of *Zingiber officinale*, with the cork removed, either completely or from the wide flat surfaces only. Whole or cut, it contains not less than 1.5% of essential oil, calculated with reference to the anhydrous drug. It has a characteristic aromatic odour. Protect from light.
The BP 2008 states that ginger may be known in commerce as unbleached ginger.
USP 31 (Ginger). The scraped, partially scraped, or unscraped rhizome of *Zingiber officinale* (Zingiberaceae), known in commerce as unbleached ginger. It contains not less than 4.5% of alcohol-soluble extractive and not less than 10% of water-soluble extractive. Store at 8° to 15°. Protect from light and moisture.

Profile
Ginger has carminative properties. It is used as a flavouring agent and has been tried for the prophylaxis of motion sickness and nausea and vomiting in pregnancy, although it does not seem to be effective for postoperative nausea and vomiting (p.1700).

Ginger oil is used in aromatherapy.

Homoeopathy. Ginger has been used in homoeopathic medicines under the following names: Zingiber; Zingiber officinale; Zing.

Nausea and vomiting. References.

1. Arfeen Z, *et al.* A double-blind randomized controlled trial of ginger for the prevention of postoperative nausea and vomiting. *Anaesth Intensive Care* 1995; **23:** 449–52.
2. Ernst E, Pittler MH. Efficacy of ginger for nausea and vomiting: a systematic review of randomized clinical trials. *Br J Anaesth* 2000; **84:** 367–71.
3. Grant KL, Lutz RB. Ginger. *Am J Health-Syst Pharm* 2000; **57:** 945–7.
4. Vutyavanich T, *et al.* Ginger for nausea and vomiting in pregnancy: randomized, double-masked, placebo-controlled trial. *Obstet Gynecol* 2001; **97:** 577–82.
5. Smith C, *et al.* A randomized controlled trial of ginger to treat nausea and vomiting in pregnancy. *Obstet Gynecol* 2004; **103:** 639–45.
6. Boone SA, Shields KM. Treating pregnancy-related nausea and vomiting with ginger. *Ann Pharmacother* 2005; **39:** 1710–13.
7. Chaiyakunapruk N, *et al.* The efficacy of ginger for the prevention of postoperative nausea and vomiting: a meta-analysis. *Am J Obstet Gynecol* 2006; **194:** 95–9.

Preparations

BP 2008: Aromatic Cardamom Tincture; Strong Ginger Tincture; Weak Ginger Tincture;
USP 31: Ginger Capsules; Ginger Tincture.

Proprietary Preparations (details are given in Part 3)

Austral.: Travacalm Natural; ***Canad.:*** Gravol Natural Source; ***Ger.:*** Zintona; ***Switz.:*** Zintona; ***Thai.:*** Zinaxin†; ***UK:*** Travel Sickness; Zinaxin.

Multi-ingredient: ***Austral.:*** Bioglan Ginger-Vite Forte; Bioglan Psylli-Mucil Plus; Boswellia Complex; Boswellia Compound; Broncafect; Cal Alkyline; Diaco; Digestive Aid; Dyzco; Extralife Arthri-Care; Feminine Herbal Complex; Ginkgo Plus Herbal Plus Formula 10†; Herbal Cleanse†; Herbal Digestive Formula†; Lifesystem Herbal Plus Formula 11 Ginkgo†; PC Regulax†; Peritone; PMS Support†; PMT Complex†; Travelaide†; ***Austria:*** Mariazeller; ***Braz.:*** Broncol; Tussifen†; ***Canad.:*** Cayenne Plus†; Chase Kolik Gripe Water; ***Cz.:*** Klosterfrau Melisana; Naturland Grosser Swedenbitter†; ***Fr.:*** Arthrolib; Evacrine; ***Ger.:*** Fovysat†; Gallexier; Gastricard†; Gastrosecur†; Gastrysat; JuViton†; Majocarmin forte†; Presselin Dyspeptikum†; Unex Amarum†; ***Hong Kong:*** Magesto; ***India:*** Carmicide; Happy'tizer; Papytazyme; Tummy Ease; Well-Beeing†; ***Indon.:*** Avogin; Pectum; Pregnasea; ***Ital.:*** Donalg; Lozione Same Urto; Pik Gel; ***Malaysia:*** Dandelion Complex†; Strepsils Cough Lozenge; Strepsils Cough Syrup; Total Man†; Zinaxin Plus†; ***Philipp.:*** Bo-D-Fense; Ruflex; ***Pol.:*** Melisana Klosterfrau; ***Rus.:*** Dipana (Дипана); Doktor Mom (Доктор Мом); Doktor Mom Herbal Cough Lozenges (Доктор Мом Растительные Пастилки От Кашля); Maraslavin (Мараславин); Original Grosser Bittner Balsam (Оригинальный Большой Бальзам Биттнера); Suprima-Broncho (Суприма-бронхо); ***S.Afr.:*** Helmontskruie; Lewensessens; Wonderkroonessens; ***Singapore:*** Artrex†; ***Switz.:*** Padma-Lax; Padmed Laxan; Tisane pour les problemes de prostate; ***Thai.:*** Carmicide†; Flatulence; Magesto; Mesto-Of; Papytazyme†; Zinaxin