4. Akpolat I, *et al.* Acute renal failure due to overdose of colloidal bismuth. *Nephrol Dial Transplant* 1996; **11:** 1890–8.
5. İşlek İ, *et al.* Reversible nephrotoxicity after overdose of colloidal bismuth subcitrate. *Pediatr Nephrol* 2001; **16:** 510–14.
6. Hruz P, *et al.* Fanconi's syndrome, acute renal failure, and tonsil ulcerations after colloidal bismuth subcitrate intoxication. *Am J Kidney Dis* 2002; **39:** E18.
7. Playford RJ, *et al.* Bismuth induced encephalopathy caused by tri potassium dicitrato bismuthate in a patient with chronic renal failure. *Gut* 1990; **31:** 359–60.
8. Hasking GJ, Duggan JM. Encephalopathy from bismuth subsalicylate. *Med J Aust* 1982; **2:** 167.
9. Mendelowitz PC, *et al.* Bismuth absorption and myoclonic encephalopathy during bismuth subsalicylate therapy. *Ann Intern Med* 1990; **112:** 140–1.
10. Vernace MA, *et al.* Chronic salicylate toxicity due to consumption of over-the-counter bismuth subsalicylate. *Am J Med* 1994; **97:** 308–9.

Toxicity from non-conventional use. The FDA has warned against use of an injectable product called bismacine or chromacine, which contains large amounts of bismuth. There are reports of death or serious adverse effects associated with its use. Although unlicensed for any use, bismacine has apparently been used in alternative medicine to treat Lyme disease.[1]

1. FDA. FDA warns consumers and health care providers not to use bismacine, also known as chromacine (issued 21st July 2006). Available at: http://www.fda.gov/bbs/topics/NEWS/2006/NEW01415.html (accessed 28/01/08)

Interactions

Bismuth salts given orally reduce the absorption of tetracyclines, possibly by chelation or by reducing tetracycline solubility as a result of increasing the gastric pH. This interaction can be minimised by separating doses of the two drugs by a couple of hours. The clinical significance of this interaction to the use of bismuth salts for peptic ulcer disease is unclear; tripotassium dicitratobismuthate or bismuth salicylate have been given at the same time as tetracycline as part of triple therapy for the eradication of *Helicobacter pylori*.

Antisecretory drugs. Pretreatment with *omeprazole* resulted in about a threefold increase in absorption of bismuth from tripotassium dicitratobismuthate in 6 healthy subjects.[1] The mean peak plasma concentration of bismuth after a single dose of 240 mg of tripotassium dicitratobismuthate was increased from 36.7 to 86.7 nanograms/mL after omeprazole suggesting an increased risk of toxicity from combined therapy. The mechanism was thought to be the increase in gastric pH produced by the antisecretory drug as similar results had been reported with *ranitidine*.[2] However, the clinical significance of these interactions to the use of antisecretory drugs with bismuth compounds for eradication of *Helicobacter pylori* is unclear; bismuth compounds have been combined with proton pump inhibitors or H_2 antagonists in short-term regimens as part of triple or quadruple therapy.

1. Treiber G, *et al.* Omeprazole-induced increase in the absorption of bismuth from tripotassium dicitrato bismuthate. *Clin Pharmacol Ther* 1994; **55:** 486–91.
2. Nwokolo CU, *et al.* The effect of histamine H -receptor blockade on bismuth absorption from three ulcer-healing compounds. *Gastroenterology* 1991; **101:** 889–94.

Pharmacokinetics

Poorly soluble bismuth compounds are largely converted to insoluble bismuth oxide, hydroxide, and oxychloride in the acidic environment of the stomach. Most of the bismuth compounds included in this monograph are thus only slightly absorbed. Increased gastric pH may increase bismuth absorption—see Antisecretory Drugs, above. Unabsorbed bismuth is excreted in the faeces. Absorbed bismuth is distributed throughout body tissues, including bone, and is slowly excreted in the urine and bile. It has a plasma half-life of about 5 days and continues to be excreted for about 12 weeks after stopping therapy.

◊ References.

1. Nwokolo CU, *et al.* The absorption of bismuth from oral doses of tripotassium dicitrato bismuthate. *Aliment Pharmacol Ther* 1989; **3:** 29–39.
2. Froomes PRA, *et al.* Absorption and elimination of bismuth from oral doses of tripotassium dicitrato bismuthate. *Eur J Clin Pharmacol* 1989; **37:** 533–6.
3. Lacey LF, *et al.* Comparative pharmacokinetics of bismuth from ranitidine bismuth citrate (GR122311X), a novel anti-ulcerant and tripotassium dicitrato bismuthate (TDB). *Eur J Clin Pharmacol* 1994; **47:** 177–80.

Uses and Administration

Some insoluble salts of bismuth are given orally for their supposed antacid action and for their mildly astringent action in various gastrointestinal disorders, including diarrhoea (p.1694) and dyspepsia (p.1695). Such salts include the aluminate, salicylate, subcarbonate, and subnitrate. Bismuth salicylate, which is given as an antidiarrhoeal and weak antacid in doses up to about 4 g daily in divided doses, possesses in addition the properties of the salicylates.

Tripotassium dicitratobismuthate is active against *Helicobacter pylori* and has been used as triple therapy (with metronidazole and either tetracycline or amoxicillin) to eradicate this organism and thereby prevent relapse of duodenal ulcer. It is also used as a mucosal protectant for the treatment of peptic ulcer disease (p.1702). Bismuth subcitrate potassium and bismuth salicylate are also active against *H. pylori* and have been used similarly in eradication regimens.

The usual oral dose of tripotassium dicitratobismuthate in benign gastric and duodenal ulceration is 240 mg twice daily, or 120 mg four times daily before food. Treatment is for a period of 4 weeks, extended to 8 weeks if necessary. Maintenance therapy with tripotassium dicitratobismuthate is not recommended although treatment may be repeated after a drug-free interval of one month. When used as part of triple therapy the usual dose of tripotassium dicitratobismuthate has been 120 mg four times daily for 2 weeks. The usual dose of bismuth salicylate as part of triple therapy is 525 mg four times daily for 2 weeks. Appropriate antisecretory treatment with a histamine H_2-antagonist or a proton pump inhibitor is usually added to these regimens.

A complex of bismuth citrate with ranitidine, ranitidine bismuth citrate (p.1768), is also used in the treatment of peptic ulcer disease.

Some insoluble salts of bismuth have been used topically in the treatment of skin disorders, wounds, and burns. Some have been used as ingredients of ointments or suppositories (sometimes containing more than one bismuth salt) in the treatment of haemorrhoids and other anorectal disorders (p.1697). Bismuth compounds that have been used topically and/or rectally include the oxide, subgallate, and subnitrate; bismuth resorcinol compounds have also been used. For the use of bismuth subnitrate and iodoform paste as a wound dressing, see Iodoform, p.1650.

Numerous other salts and compounds of bismuth have been promoted for various therapeutic purposes. Glycobiarsol was formerly given orally as an amoebicide.

Homoeopathy. Bismuth has been used in homoeopathic medicines under the following names: Bismuthum; Bismutum metallicum.

Bismuth oxide has been used in homoeopathic medicines under the following names: Bismuthum oxydatum; Bis. ox.

Bismuth subnitrate has been used in homoeopathic medicines under the following names: Heavy bismuth subnitrate; Bismuthi subnitras ponderosus; Bismutum subnitricum; Bism. sub.

Preparations

BPC 1954: Bismuth Subnitrate and Iodoform Paste;
USP 31: Bismuth Subsalicylate Magma; Bismuth Subsalicylate Oral Suspension; Bismuth Subsalicylate Tablets; Compound Resorcinol Ointment; Milk of Bismuth.

Proprietary Preparations (details are given in Part 3)
Arg.: Re-Dux; Sesamoil; ***Braz.:*** Pepto-Bismol; Peptosan†; Peptulan; Senophile†; ***Canad.:*** Bismed†; Maalox Multi-action; Neo-Laryngobis; Pepto-Bismol; Personnel; ***Cz.:*** De-Nol†; Jatrox†; ***Fr.:*** Amygdorectol†; ***Ger.:*** Angass S†; Dermatol†; Haemo-Exhirud Bufexamac; Katulcin-R†; Stryphnasal N; Telen†; Ulkowis†; ***Gr.:*** De-Nol; ***Hong Kong:*** De-Nol; ***Hung.:*** De-Nol†; ***India:*** Trymo; ***Indon.:*** Scantoma; ***Irl.:*** De-Noltab†; ***Israel:*** Kalbeten; Pink Bismuth; ***Ital.:*** De-Nol; ***Mex.:*** Biselic†; Bismed; Bismofarma; Bisval; Facidmol; Itamol; Pepto-Bismol; Siparox; Sucrato; ***Neth.:*** De-Nol; ***NZ:*** De-Nol; ***Port.:*** De-Nol†; ***Rus.:*** De-Nol (Де-Нол); ***S.Afr.:*** De-Nol; ***Singapore:*** De-Nol; ***Spain:*** Gastrodenol; Rectamigdol; ***Switz.:*** Amygdorectol; ***Thai.:*** Gastro-Bismol; ***Turk.:*** De-Nol; Dermatol; ***UK:*** De-Noltab; Pepto-Bismol; ***USA:*** Bismatrol; Children's Kaopectate; Devrom; K-Pek†; Kao-Tin; Kaopectate; Kapectolin; Maalox Total Stomach Relief; Peptic Relief; Pepto-Bismol; ***Venez.:*** Pepto-Bismol†.

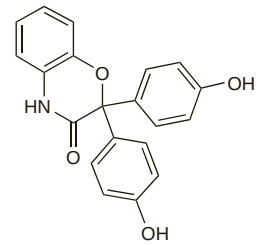
Multi-ingredient: ***Arg.:*** Anusol; Anusol Duo S; Benitol; Bismuto con Pectina; Colistop; Colistoral†; Crema De Bismuto; Cutidermin†; Gastop; Gastranil†; Gastricur; Histidanol†; Lemil; Mabis; ***Belg.:*** Gastrofilm†; Procto-Synalar; Rectovasol; ***Braz.:*** Aftine; Anusol-HC; Bismu-Jet; Bisuisan†; Claudemor; Colutoide; Cutisanol; Magnesia Bisurada; Neoseptil†; Salicilato de Bismuto Composto†; Senophile†; ***Canad.:*** Bismutal; Onrectal; Pepto-Bismol; Thunas Pile†; ***Cz.:*** Carbocit; Mastu S; Sagittaproct†; Spofax; Suspensio Visnevski cum Pice Liquida Herbacos; ***Fin.:*** Tannopon; ***Fr.:*** Anoreine; Anusol; Cutiphile†; Paps; Pholcones Bismuth; ***Ger.:*** Angass; Anisan†; Bismolan H Corti; Bismolan N†; Bismolan†; Combustin Heilsalbe; Duoventrin; Eulatin N; Eulatin NN; Faktu akut; Friosmin N†; Hamo-ratiopharm N; Hamoagil plus; Mastu S; Nervogastrol N†; Pascomag†; Spasmo-Nervogastrol†; Tamposit N†; Ventricon N; Vit-u-pept†; Wismut comp†; ***Hong Kong:*** Anusol; Anusol-HC†; Haemoral; Mastu S; Rowatanal; ***Hung.:*** Bolus Adstringens; Dermaforine†; Mastu S; Nilacid; ***Indon.:*** Anusol; Anusol-HC; ***Irl.:*** Anugesic-HC; Anusol; Anusol-HC; Rowatanal; ***Israel:*** Anusol†; Hemo; Rectozorin; Rekiv; ***Ital.:*** Antiemorroidali; Anusol; ***Malaysia:*** Rowatanal; ***Mex.:*** Estomacurol; Heliton; ***Neth.:*** Anaesthetica; Roteroblong Maagtabletten; Theranal; ***Pol.:*** Gastro; Hemorectal; ***Port.:*** Claudemor†; Servetinal†; Synalar Rectal; ***Rus.:*** Anaesthesol (Анестезол); Anusol (Анузол); Neo-Anusol (Нео-анузол); Proctosan (Проктозан); Simetrid (Симетрид); ***S.Afr.:*** Anugesic; Anusol; Arola Rosebalm; Biskapect; Bisma Rex†; Chloropect; Enterodyne; Kantrexil; Sentinel Ulcer Mixture; ***Singapore:*** Rowatanal; ***Spain:*** Grietalgen; Grietalgen Hidrocort†; Hemodren Compuesto†; Nasopomada; Pomada Infantil Vera†; Sabanotropico; Synalar Rectal; ***Switz.:*** Bismorectal; Cicafissan; Euproctol N; Fissan†; Furodermal; Haemocortin; Haemolan; La pommade du Dr Brand; Leucen; Magenpulver Hafter†; Magentabletten Hafter†; Rectoseptal-Neo bismuthe; ***Thai.:*** Anusol; Biodan†; Mastu S; Ulgastrin; ***Turk.:*** Dermikolin; Hemoralgine; Kortos; Metamorfoz; ***UK:*** Anugesic-HC; Anusol; Anusol-HC, Plus HC; Bisma-Rex; Hemocane; Moorland; OxBipp; Stomach Mixture; ***USA:*** Anumed; Anumed HC; BFI; Calmol; Heliadc; Hem-Prep; Hemril; K-C; Kao-Paverin; Kaodene Non-Narcotic; Mammol; Pylera; Rectagene Medicated Rectal Balm; ***Venez.:*** Claudemor†; Klincosal; Polantac.

Bisoxatin Acetate *(BANM, USAN, rINNM)*

Acetato de bisoxatina; Bisoxatin Diacetate; Bisoxatine, Acétate de; Bisoxatini Acetas; Wy-8138. 2,2-Bis(4-hydroxyphenyl)-1,4-benzoxazin-3(2*H*,4*H*)-one diacetate.

Бизоксатина Ацетат

$C_{24}H_{19}NO_6$ = 417.4.
CAS — 17692-24-9 (bisoxatin); 14008-48-1 (bisoxatin acetate).
ATC — A06AB09.
ATC Vet — QA06AB09.



(bisoxatin)

Profile

Bisoxatin acetate is a stimulant laxative that has been used in the treatment of constipation (p.1693).

Preparations

Proprietary Preparations (details are given in Part 3)
Belg.: Wylaxine; ***Venez.:*** Regoxal.

Bran

Crusca; Farelo; Kleie; Salvado; Son.

Отруби

Description. Bran consists of the fibrous outer layers of cereal grains. It contains celluloses, polysaccharides or hemicelluloses, protein, fat, minerals, and moisture and may contain part of the germ or embryo. Bran provides water-insoluble fibre and, depending on the source, may also provide water-soluble fibre (see also Dietary Role, below). It comprises about 12% of the weight of the grain and is a byproduct of flour milling. It is available in various grades.

Pharmacopoeias. *US* includes wheat bran.
USP 31 (Wheat Bran). The outer fraction of the cereal grain (comprising the pericarp, seed coat (testa), nucellar tissue, and aleurone layer) derived from *Triticum aestivum*, *T. compactum*, *T. durum*, or other common einkorn and emmer wheat cultivars. It is obtained by milling and processing the whole wheat grain, and is available in a variety of particle sizes depending on the degree of milling. It contains not less than 36% of dietary fibre. It is a light tan powder having a characteristic aroma. Practically insoluble in cold water and in alcohol.

Adverse Effects

Large quantities of bran may temporarily increase flatulence and abdominal distension, and intestinal obstruction may occur rarely.

Colonic atony. Colonic atony has been reported in patients who had increased their intake of dietary fibre to relieve constipation associated with systemic sclerosis.[1]

1. Gough A, *et al.* Dietary advice in systemic sclerosis: the dangers of a high fibre diet. *Ann Rheum Dis* 1998; **57:** 641–2.

Diarrhoea. A report of diarrhoea induced by a dramatic increase in fibre intake. Reduction of dietary fibre led to a return to normal bowel habit in 2 to 3 days.[1]

1. Saibil F. Diarrhea due to fiber overload. *N Engl J Med* 1989; **320:** 599.

Intestinal obstruction. Intestinal obstruction associated with excessive bran intake has been reported.[1-3]

1. Allen-Mersh T, De Jode LR. Is bran useful in diverticular disease? *BMJ* 1982; **284:** 740.
2. Cooper SG, Tracey EJ. Small-bowel obstruction caused by oat-bran bezoar. *N Engl J Med* 1989; **320:** 1148–9.
3. Miller DL, *et al.* Small-bowel obstruction from bran cereal. *JAMA* 1990; **263:** 813–14.

Precautions

Bran is contra-indicated in patients with intestinal obstruction or with undiagnosed abdominal symptoms. There is a particular risk of intestinal or oesophageal obstruction if bulk laxatives are swallowed dry; they should be taken with sufficient fluid and should not be taken immediately before going to bed. Wheat bran should be avoided in gluten enteropathies and coeliac disease.

Interactions

Bran may reduce the absorption of some drugs when given together by mouth. Interference with iron, zinc, and calcium absorption has been reported; calcium phosphate may be added to bran to neutralise fytic acid, which can contribute to such interference.

Uses and Administration

The main use of bran is as a bulk laxative and source of dietary fibre in the management of disorders of the gastrointestinal tract such as constipation (p.1693), especially in diverticular disease (p.1695); it is also widely used in irritable bowel syndrome, although its value has been questioned (see p.1699). It should always be taken with plenty of fluid.

Bran is used as the basis for some breakfast cereals.

Dietary role. There is no precise definition for the complex mixture of substances known as dietary fibre. It has been defined as *plant* polysaccharides and lignin resistant to hydrolysis by the digestive enzymes of humans but this covers many substances other than cell-wall and related polysaccharides. Non-starch polysaccharides are the major component of the plant cell wall and are used as an index of dietary fibre. They comprise water-soluble fibres such as pectins, gums, and mucilages and water-insoluble fibres such as cellulose. Wheat, maize, and rice contain mainly insoluble non-starch polysaccharides whereas oats, barley, and rye have a significant proportion of soluble fibres.[1] Because the USA originally included nondigestible *animal* carbohydrates in the definition of fibre, the Food and Nutrition Board in the USA proposed a new definition of fibre, whereby dietary fibre consists of nondigestible carbohydrates and lignin that are intrinsic and intact in plants, and functional fibre consists of isolated, nondigestible plant or animal carbohydrates that have beneficial physiological effects in humans. Total fibre is the sum of dietary and functional fibre.[2]

In the UK, dietary reference values (DRV) have been published for non-starch polysaccharides.[1] It has been proposed[1] that adult diets should contain an average for the population of 18 g daily (individual range 12 to 24 g daily) non-starch polysaccharide from a variety of foods whose constituents contain it as a naturally integrated component. Children should receive proportionately less non-starch polysaccharide according to body size. No evidence exists for benefit of intakes of non-starch polysaccharide in excess of 32 g daily, and therefore there is no advantage in exceeding this amount.

In the USA, an adult dietary fibre intake of 20 to 35 g daily has been suggested; children should consume an amount equivalent to their age plus 5 g daily.[3]

1. DOH. Dietary reference values for food energy and nutrients for the United Kingdom: report of the panel on dietary reference values of the committee on medical aspects of food policy. *Report on health and social subjects 41*. London: HMSO, 1991.
2. Standing Committee on the Scientific Evaluation of Dietary Reference Intakes of the Food and Nutrition Board. *Dietary Reference Intakes for energy, carbohydrate, fiber, fat, fatty acids, cholesterol, protein, and amino acids*. Washington DC: National Academy Press, 2002/2005. Also available at: http://www.nap.edu/openbook.php?record_id=10490 (accessed 04/04/08)
3. Marlett JA, *et al.* Position of the American Dietetic Association: health implications of dietary fiber. *J Am Diet Assoc* 2002; **102:** 993–1000. Also available at: http://www.eatright.org/cps/rde/xchg/ada/hs.xsl/advocacy_10175_ENU_HTML.htm (accessed 28/03/07)

Disease prevention. Diseases such as colorectal cancer, ischaemic heart disease, diabetes mellitus, and obesity are common in affluent developed countries but occur rarely in rural Africa. This difference in disease patterns has been linked to the low fibre intake in developed countries compared with rural Africans. However, there are many other differences in diet and lifestyle, such as a lower intake of fat, protein, and sugar in rural Africans and less exposure to toxins and pollutants, any of which could contribute to the difference. The excessive consumption of energy-rich foods may be more to blame for diseases of affluence than is deficiency of dietary fibre.[1]

Results from large prospective cohort studies have been conflicting as to whether there is any *reduction in risk* of **colorectal cancer** associated with a high intake of dietary fibre, and have mostly failed to show a reduction in the *recurrence rate* of colorectal adenomas (although most adenomas do not develop into cancer, and so the relevance of these results is unclear[2]). A pooled analysis of 13 prospective cohort studies found a significant inverse association between dietary fibre intake and colorectal cancer. However, after adjusting for other risk factors, this association was attenuated and no longer statistically significant. There was some suggestion that intake of dietary fibre from cereals and from whole-grain foods were both associated with a weak reduction in the risk of rectal cancer.[3] Some have commented[4] that fibre is a broad term encompassing a wide range of organic material, which may have a large number of actions on digestive physiology. Furthermore, there is some concern that the use of fibre supplements is not entirely without harmful effects: it has been pointed out that fermentable fibre substrates can stimulate cell proliferation in the colon.[5] However, the role of cell proliferation as a marker for the development of colonic cancer is questioned by some authors.[6]

A small randomised crossover study[7] in patients with type 2 **diabetes mellitus** suggested that an increased intake of dietary fibre was associated with improved glycaemic control, decreased hyperinsulinaemia, and lower plasma lipid concentrations. In prospective cohort studies, inverse associations were found between whole-grain intake and the risk of type 2 diabetes mellitus;[8-11] in some studies, this inverse association persisted for cereal fibre intake,[9-11] but in one the protective effect of whole grain could not entirely be explained by fibre content.[8]

Fibre may act as an obstacle to energy intake by displacing available calories and nutrients from the diet, by increasing satiety, and by decreasing the absorption efficiency of the small intestine. Epidemiological studies support the hypothesis that a higher dietary fibre intake prevents **obesity**; populations that report higher fibre consumption also demonstrate lower obesity rates.[12] Weight gain was inversely associated with increases in the intake of whole grains but positively associated with increases in the intake of refined grains, emphasising the importance of distinguishing whole-grain from refined-grain products.[13]

A large prospective cohort study in men found an inverse association between whole-grain intake and the incidence of **coronary heart disease**; the finding was even stronger for bran intake. These associations were attenuated, but not eliminated, by adjustment for other risk factors for coronary heart disease.[14] There is some suggestion that diets high in fibre may have a moderate effect on blood pressure reduction.[15]

1. Anonymous. The bran wagon. *Lancet* 1987; **i:** 782–3.
2. Byers T. Diet, colorectal adenomas, and colorectal cancer. *N Engl J Med* 2000; **342:** 1206–7.
3. Park Y, *et al.* Dietary fiber intake and risk of colorectal cancer: a pooled analysis of prospective cohort studies. *JAMA* 2005; **294:** 2849–57.
4. Goodlad RA. Dietary fibre and the risk of colorectal cancer. *Gut* 2001; **48:** 587–9.
5. Wasan HS, Goodlad RA. Fibre-supplemented foods may damage your health. *Lancet* 1996; **348:** 319–20.
6. Hill MJ, Leeds AR. Fibre and colorectal cancer. *Lancet* 1996; **348:** 957.
7. Chandalia M, *et al.* Beneficial effects of high dietary fiber intake in patients with type 2 diabetes mellitus. *N Engl J Med* 2000; **342:** 1392–8.
8. Liu S, *et al.* A prospective study of whole-grain intake and risk of type 2 diabetes mellitus in US women. *Am J Public Health* 2000; **90:** 1409–15.
9. Meyer KA, *et al.* Carbohydrates, dietary fiber, and incident type 2 diabetes in older women. *Am J Clin Nutr* 2000; **71:** 921–30.
10. Fung TT, *et al.* Whole-grain intake and the risk of type 2 diabetes: a prospective study in men. *Am J Clin Nutr* 2002; **76:** 535–40.
11. Montonen J, *et al.* Whole-grain and fiber intake and the incidence of type 2 diabetes. *Am J Clin Nutr* 2003; **77:** 622–9.
12. Slavin JL. Dietary fiber and body weight. *Nutrition* 2005; **21:** 411–18.
13. Liu S, *et al.* Relation between changes in intakes of dietary fiber and grain products and changes in weight and development of obesity among middle-aged women. *Am J Clin Nutr* 2003; **78:** 920–7.
14. Jensen MK, *et al.* Intakes of whole grains, bran, and germ and the risk of coronary heart disease in men. *Am J Clin Nutr* 2004; **80:** 1492–9.
15. He J, *et al.* Effect of dietary fiber intake on blood pressure: a randomized, double-blind, placebo-controlled trial. *J Hypertens* 2004; **22:** 73–80.

Preparations

Proprietary Preparations (details are given in Part 3)
Braz.: Fibracap†; Trifibra Mix; ***Canad.:*** Novo-Fibre; ***Fr.:*** Doses-O-Son; ***Irl.:*** Trifyba†; ***Ital.:*** Crusken; ***Malaysia:*** Fibrosine†; ***Mex.:*** Fisiolax†; ***Neth.:*** Fiberform; ***Port.:*** Infibran; ***Singapore:*** Fibrosine; ***Swed.:*** Fiberform; Fiberform Mix; ***Switz.:*** Fibion†.

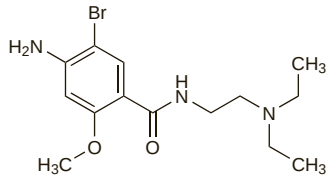
Multi-ingredient: *Arg.:* Centella Queen Reductora; Gelax; Gurfi Fibras†; Salutaris; ***Austral.:*** Neo-Trim Fibre†; Procholt; Proslender†; ***Austria:*** Herbelax; ***Fr.:*** Maxi-Flore; Stimulance; ***Ital.:*** Bio Fibralax Bi-Attivo; Ecofibra; Levoplus; Plurilac; Resource Benefiber; Sedastip; Stimulance; ***Mex.:*** Psilumax; ***NZ:*** Stimulance; ***Pol.:*** Magnezytki; Otrebuski; ***Port.:*** Stimulance†; ***Venez.:*** Senokot con Fibra†.

Bromopride *(rINN)*

Bromoprida; Bromopridum; CM-8252; VAL-13081. 4-Amino-5-bromo-*N*-(2-diethylaminoethyl)-*o*-anisamide.

Бромоприд

$C_{14}H_{22}BrN_3O_2$ = 344.2.
CAS — 4093-35-0.
ATC — A03FA04.
ATC Vet — QA03FA04.



Profile

Bromopride is a substituted benzamide similar to metoclopramide (p.1747), used in a variety of gastrointestinal disorders including nausea and vomiting (p.1700) and motility disorders. It is given in a usual oral dose of 20 to 60 mg daily in divided doses, or 20 mg daily by intramuscular or intravenous injection. The hydrochloride is also used.

Preparations

Proprietary Preparations (details are given in Part 3)
Braz.: Bilenzima; Bromoprid†; Digerex; Digesan; Digesprid; Digestil; Digestina; Digeston†; Pangest; Plamet; Pridecil; ***Ital.:*** Procirex; Valopride.

Multi-ingredient: *Braz.:* Digecap-Zimatico; Enziprid†; Lansoprid; Primeral; ***Port.:*** Modulanzime.

Buckthorn

Bacca Spinae Cervinae; Espino cerval; Kreuzdorn; Nerprun.

Жостер Слабительный; Крушина Слабительная

NOTE. Distinguish from Alder Buckthorn Bark (see Frangula Bark, p.1732) and from Sea Buckthorn (p.2384).

Pharmacopoeias. In *Ger.*

Profile

Buckthorn is the dried ripe fruit of *Rhamnus cathartica* (Rhamnaceae); the bark is also occasionally used. Buckthorn is an anthraquinone stimulant laxative.

Preparations

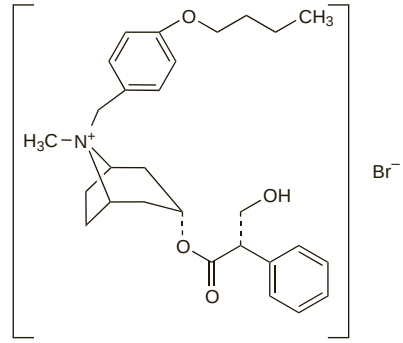
Proprietary Preparations (details are given in Part 3)
Multi-ingredient: *Austral.:* Neo-Cleanse; ***UK:*** Cleansing Herbs; Lion Cleansing Herbs.

Butropium Bromide *(rINN)*

Bromuro de butropio; Butropii Bromidum; Butropium, Bromure de. (−)-(1*R*,3*r*,5*S*)-8-(4-Butoxybenzyl)-3-[(*S*)-tropoyloxy]tropanium bromide.

Бутропия Бромид

$C_{28}H_{38}BrNO_4$ = 532.5.
CAS — 29025-14-7.



Pharmacopoeias. In *Jpn.*

Profile

Butropium bromide is a quaternary ammonium antimuscarinic with peripheral effects similar to those of atropine (p.1219). It has been used in the symptomatic treatment of visceral spasms in an oral dose of 30 mg daily in 3 divided doses.