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†.

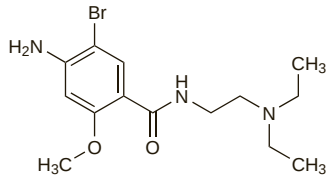
Multi-ingredient: *Arg.:* Centella Queen Reductora; Gelax; Gurfi Fibras†; Salutaris; ***Austral.:*** Neo-Trim Fibre†; Procholt; Proslender†; ***Austria:*** Herbelax; ***Fr.:*** Maxi-Flore; Stimulance; ***Ital.:*** Bio Fibralax Bi-Attivo; Ecofibra; Levoplus; Plurilac; Resource Benefiber; Sedastip; Stimulance; ***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

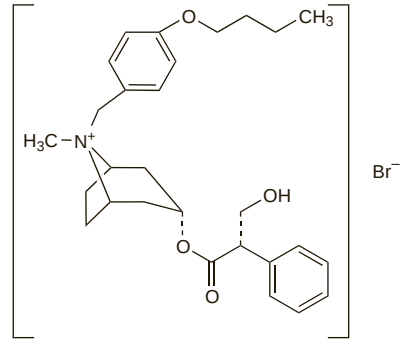
Proprietary Preparations (details are given in Part 3)
Multi-ingredient: *Austral.:* Neo-Cleanse; ***UK:*** Cleansing Herbs; Lion Cleansing Herbs.

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.

Preparations

Proprietary Preparations (details are given in Part 3)
Indon.: Coliopan; ***Jpn:*** Coliopan; ***Malaysia:*** Coliopan; ***Singapore:*** Coliopan†.

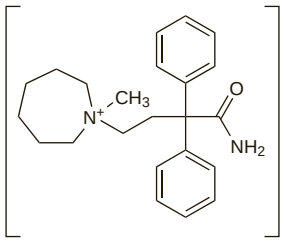
Buzepide Metiodide *(rINN)*

Buzépide, Métiodure de; Buzepidi Metiodidum; Diphexamide Iodomethylate; FI-6146; Metazepium Iodide; Metioduro de buzepida; R-661. 1-(3-Carbamoyl-3,3-diphenylpropyl)-1-methylperhydroazepinium iodide.

Бузепида Метйодид

$C_{23}H_{31}IN_2O$ = 478.4.

CAS — 15351-05-0.



Profile

Buzepide metiodide is a quaternary ammonium antimuscarinic with peripheral effects similar to those of atropine (p.1219). It has been given with other compounds for upper respiratory-tract disorders and in gastrointestinal disorders with smooth muscle spasm.

Preparations

Proprietary Preparations (details are given in Part 3)
Multi-ingredient: ***Fr.:*** Vesadol†; ***Ital.:*** Denoral†.

Calcium Carbonate

Calcii carbonas; Calcii Carbonas Praecipitatus (precipitated calcium carbonate); Calcium, carbonate de; Carbonato de calcio; Creta Preparada; E170; Kalcio karbonatas; Kalciumkarbonat; Kalcium-karbonát; Kalsiumkarbonaatti; Kalsiyum karbonat; Precipitated Calcium Carbonate; Precipitated Chalk; Uhličitan vápenatý; Wapnia węglan; Wapnia węglan strącony (precipitated calcium carbonate).

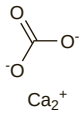
Кальция Карбонат

$CaCO_3$ = 100.1.

CAS — 471-34-1.

ATC — A02AC01; A12AA04.

ATC Vet — QA02AC01; QA12AA04.



Pharmacopoeias. In *Chin.*, *Eur.* (see p.vii), *Int.*, *Jpn*, *US*, and *Viet.*

Ph. Eur. 6.2 (Calcium Carbonate). A white or almost white powder. Practically insoluble in water.

USP 31 (Calcium Carbonate). A fine, white, odourless, microcrystalline powder. Practically insoluble in water; its solubility in water is increased by the presence of carbon dioxide or ammonium salts although the presence of any alkali hydroxide reduces its solubility; insoluble in alcohol; dissolves with effervescence in acetic acid, in hydrochloric acid, and in nitric acid.

Adverse Effects, Treatment, and Precautions

Calcium carbonate may occasionally cause constipation. Flatulence from released carbon dioxide may occur in some patients. High doses or prolonged use may lead to gastric hypersecretion and acid rebound. Like other calcium salts (see p.1676), calcium carbonate can cause hypercalcaemia, particularly in patients with renal impairment or after high doses. Alkalosis (p.1667) may also occur as a result of the carbonate anion. There have been rare reports of the milk-alkali syndrome, see below, and tissue calcification.

For precautions to be observed with the use of calcium carbonate, see Calcium, p.1676.

Milk-alkali syndrome. The milk-alkali syndrome of hypercalcaemia, alkalosis and renal impairment was first identified in the 1920s and may still occur in patients who ingest large amounts of calcium and absorbable alkali,[1,2] and in patients being treated for osteoporosis with calcium carbonate plus other drugs that may increase the absorption of calcium.[1] It is not uncommon as a cause of hypercalcaemia requiring hospitalisation.[1] The syndrome has also been reported in a patient taking recommended doses of antacids containing calcium carbonate for chronic epigastric discomfort,[3] and in a pregnant woman taking high, but not grossly excessive, doses of calcium (about 3 g of elemental calcium daily).[4] Metastatic calcification can develop.[5]

For reference to thiazide diuretics increasing the risk of the milk-alkali syndrome in patients taking moderately large doses of calcium carbonate, see p.1310.

1. Picolos MK, *et al.* Milk-alkali syndrome is a major cause of hypercalcaemia among non-end-stage renal disease (non-ESRD) inpatients. *Clin Endocrinol (Oxf)* 2005; **63:** 566–76.
2. Felsenfeld AJ, Levine BS. Milk alkali syndrome and the dynamics of calcium homeostasis. *Clin J Am Soc Nephrol* 2006; **1:** 641–54.
3. Camidge R, Peaston R. Recommended dose antacids and severe hypercalcaemia. *Br J Clin Pharmacol* 2001; **52:** 341–2.
4. Gordon MV, *et al.* Life-threatening milk-alkali syndrome resulting from antacid ingestion during pregnancy. *Med J Aust* 2005; **182:** 350–1.
5. Duthie JS, *et al.* Milk-alkali syndrome with metastatic calcification. *Am J Med* 1995; **99:** 102–3.

Interactions

As for other calcium salts, p.1677.

As outlined on p.1692, antacids, including calcium salts, interact with many other drugs both by alterations in gastric pH and emptying, and by formation of complexes that are not absorbed. Interactions can be minimised by giving calcium carbonate and any other medication 2 to 3 hours apart.

Omeprazole. In a study[1] of 18 women over the age of 65, the use of omeprazole for a week significantly reduced the absorption of calcium from a calcium carbonate supplement given on an empty stomach. Fractional calcium absorption was reduced from 9.1% with placebo to 3.5% with omeprazole.

1. O'Connell MB, *et al.* Effects of proton pump inhibitors on calcium carbonate absorption in women: a randomized crossover trial. *Am J Med* 2005; **118:** 778–81.

Pharmacokinetics

Calcium carbonate is converted to calcium chloride by gastric acid. Some of the calcium is absorbed from the intestines and the unabsorbed portion is excreted in the faeces, as described for other calcium salts, p.1677.

Uses and Administration

Calcium carbonate is used as an antacid (p.1692), usually in oral doses of up to about 1.5 g. It is often given with other antacids, especially magnesium-containing antacids.

Calcium carbonate is also used as a calcium supplement in deficiency states and as an adjunct in the management of osteoporosis, as described under Calcium, p.1677.

Calcium carbonate binds phosphate in the gastrointestinal tract to form insoluble complexes and reduces phosphate absorption. It is used to treat hyperphosphataemia in patients with chronic renal failure (see Renal Osteodystrophy, p.1086) or associated secondary hyperparathyroidism (p.1087). For this purpose, initial doses of 2.5 g daily by mouth in divided doses have been given, increased to up to 17 g daily in divided doses as required. The *BNFC* suggests the following doses in infants and children, given 3 or 4 times daily with or before meals, and adjusted as necessary:

- 1 month to 1 year of age, 120 mg
- 1 to 6 years, 300 mg
- 6 to 12 years, 600 mg
- 12 to 18 years, 1.25 g

Calcium carbonate is also used as a food additive.

Homoeopathy. Native forms of calcium carbonate have been used in homoeopathic medicines under the following names: Calcarea Carbonica; Calc. Carb.; Calcium carbonicum Hahnemanni; Conchae; Calcium Carbonate of Hahnemann; Cal. carb.

Preparations

BP 2008: Alginate Raft-forming Oral Suspension; Calcium and Colecalciferol Tablets; Chewable Calcium Carbonate Tablets;
USP 31: Alumina, Magnesia, and Calcium Carbonate Oral Suspension; Alumina, Magnesia, and Calcium Carbonate Tablets; Alumina, Magnesia, Calcium Carbonate, and Simethicone Tablets; Aluminum Subacetate Topical Solution; Calcium and Magnesium Carbonates Oral Suspension; Calcium and Magnesium Carbonates Tablets; Calcium Carbonate and Magnesia Tablets; Calcium Carbonate Lozenges; Calcium Carbonate Oral Suspension; Calcium Carbonate Tablets; Calcium Carbonate, Magnesia, and Simethicone Tablets.

Proprietary Preparations (details are given in Part 3)
Arg.: Bica†; Calcio Acido; Calcional; Calcium-Sandoz; Cavirox Junior†; Dexacid†; Mylanta Pocket†; Pluscal; Renacalcio; Ultracalcium; Uvasal Tums; ***Austral.:*** Andrews Tums Antacid; Cal-Sup; Caltrate; Sandocal; Titralac; ***Austria:*** Calcium-Sandoz; Dreisacarb; ***Belg.:*** Cacit; Calci-Chew; Sandoz Calcium; Steocar; ***Braz.:*** Calcium-Sandoz F; Calciumvit†; Calsan; Maxicalc; Natecal†; Nutricalcio†; Os-Cal; Osporin†; Osseopor; ***Canad.:*** Apo-Cal; Cal-500; Calcite; Calcium Oyster Shell; Calcium-Sandoz†; Calsan; Caltrate; Hi Potency Cal; Maalox Extra Strength; Maalox Quick Dissolve†; Maalox Regular Strength; Neo Cal; Nu Cal; Os-Cal; Tums; ***Chile:*** Aplical†; Calcefor; Calcefor Cap; Calcio; Calcium Factor; Calcium-Sandoz; Calcivorin; Caprimida; Elcal; Kaplus; Levucal; Natecal; Sanidecal; ***Cz.:*** Maxi-Kalz; Vitacalcin; ***Denm.:*** Calcium-Sandoz; ***Fin.:*** Calcichew; Calcium-Sandoz; Kalcidon; Kalcipos; ***Fr.:*** Cacit; Calcidia; Calcidose; Calciprat; Calcium-Sandoz; Calperos; Calprimum; Caltrate; Densical; Densical vitamine D ; Eucalcic; Fixical; Osteocal; Perical; ***Ger.:*** Basti-Cal†; Biolectra Calcium†; Calci-Gry; Calcigamma; Calcimagon; Calcimed†; Calcitridin†; Calcium AL; Calcium beta; Calcium Dago†; Calcium Heumann†; Calcium Hexal†; Calcium Stada; Calcium Verla; Calcium von CT; Calcium-dura; Calcium-Sandoz; CC-Nefro; Dreisacarb; Loscalcon; Ospur Ca; Vivural†; ***Gr.:*** Alcamex; Body-Calcin; Calcioral; Tums; ***Hong Kong:*** Apo-Cal; Calcichew†; Calcium-Sandoz†; Caltrate; Os-Cal; Scott's Hi-Calcium; Titralac; ***Hung.:*** Beres Calcium; Calcicarb; Calcichew; Calcium-Sandoz; ***India:*** Calcium-Sandoz; Sandocal†; ***Indon.:*** Calcium-Sandoz Junior Strength; Calnat; Calos; Calsan; Osteocal; Stomacain; ***Irl.:*** Cacit†; Calcichew; Rennie Chewable Tablets; Rowarolan; Sandocal; Tums†; ***Israel:*** Calci-Rav; Calcimore; Calcium-Sandoz; Caltrate; Fast; Tums; Tzarevet X; ***Ital.:*** Adiecal; Biocalcium; Cacit; Cal-Car; Calbisan†; Calciodie; Calciopiu; Calcium-Sandoz; Calma; Carbo; Carbosint; Carbotop†; Citracal†; Fervical†; Idracal; Lubical; Metocal; Recal; Salicalcium†; Savecal; Top Calcium; Unical†; ***Malaysia:*** Apo-Cal†; Cal-Sup; Caltrate; ***Mex.:*** Bexacal; Calcifar; Calcium-Sandoz; Calsan; Caltrate; Ciocar; Grisical†; Mubonet; Osteomin; Solibone; Tums; ***Neth.:*** Cacit; Calci-Chew; Calcium-Sandoz; ***Norw.:*** Calcium-Sandoz; Titralac; ***NZ:*** Calcium-Sandoz; Caltrate; Osteo; Titralac; ***Philipp.:*** Calci-Aid; Calcium-Sandoz; Calmate; Calsan; Tums; ***Pol.:*** Additiva Calcium; Calcium-Sandoz Forte; Calperos; FrutiCal; Ostical; Vicalvit; ***Port.:*** Calcior; Calcioral; Calcitab; Calcium-Sandoz; Natecal; Sandocal; Tums; ***Rus.:*** Calcium-Sandoz Forte (Кальций-Сандоз Форте); ***S.Afr.:*** Calcichew; Calcium-Sandoz; Calsuba; Caltrate; Titralac; Tums; ***Singapore:*** Cal-Sup†; Calcium-Sandoz; Caltrate; ***Spain:*** Calcio 20†; Calcium-Sandoz Forte; Caosina; Carbocal; Cimascal; Densical; Fortical†; Mastical; Natecal; ***Swed.:*** Calcitugg; Calcium-Sandoz; Kalcidon; Kalcipos; Kalcitena; ***Switz.:*** Calcium-Sandoz; Calperos; Fixateur phospho-calcique; Maxi-calc†; ***Thai.:*** Bo-Ne-Ca; Cal-Os; Calcanate; Calcar; Calcarbonate; Calcium Central Poly; Calcium-Sandoz; Calsum; Caltab; Caltrate; Carbocal; Carbocalc; Kal-Forte; Prima-Cal; Sorcal†; Weifa-Calcium; ***Turk.:*** Anti-Fosfat Cc; Calcium-Sandoz; ***UK:*** Adcal; Cacit; Calcichew; Rapeze; Remegel; Rennie Soft Chews; Sandocal; Sea-Cal; Setlers; Titralac†; Tums; ***USA:*** Alka-Mints; Alkets†; Amitone†; Antacid; Calci-Chew; Calci-Mix; Calcium-600; Caltrate; Chooz; Equilet†; Maalox Antacid/Calcium†; Maalox Childrens; Maalox Quick Dissolve†; Mallamint; Mylanta; Nephro-Calci; Os-Cal; Oysco; Oyst-Cal; Rolaids Extra Strength Softchews; Surpass; Titralac Extra Strength; Trial Antacid; Tums; ***Venez.:*** Calcion; Calcium-Sandoz; Caltrate†; Foscalvit; Frutacid; Oscal†; Sandocal; Titralac; Tums.

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

Used as an adjunct in: ***Arg.:*** Aspirina; Bufferin†; ***Braz.:*** Bufferin; ***Canad.:*** Aspirin with Stomach Guard; Bufferin; Tri-Buffered ASA; ***Hung.:*** Kalmopyrin; ***Ital.:*** Bufferin†; ***Pol.:*** Calcipiryna; Polopiryna S; ***USA:*** Adprin-B; Ascriptin; Asprimox; Bufferin; Extra Strength Bayer Plus; Magnaprin†.

Carbenoxolone Sodium *(BANM, USAN, rINNM)*

Carbenoxolona sódica; Carbénoxolone Sodique; Disodium Enoxolone Succinate; Karbenoksolon Sodyum; Natrii Carbenoxolonum. 3β-(3-Carboxypropionyloxy)-11-oxo-olean-12-en-30-oic acid, Disodium Salt.

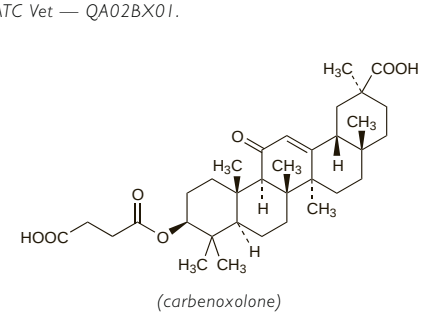
Натрий Карбеноксолон

$C_{34}H_{48}Na_2O_7$ = 614.7.

CAS — 5697-56-3 (carbenoxolone); 7421-40-1 (carbenoxolone disodium).

ATC — A02BX01.

ATC Vet — QA02BX01.



(carbenoxolone)

Pharmacopoeias. In *Br.*

BP 2008 (Carbenoxolone Sodium). A white or pale cream-coloured, hygroscopic powder. Freely soluble in water; sparingly soluble in alcohol; practically insoluble in chloroform and in ether. A 10% solution in water has a pH of 8.0 to 9.2.

Adverse Effects, Treatment, and Precautions

Carbenoxolone sodium has mineralocorticoid-like effects and ingestion may produce sodium and water retention and hypoka-