6. Chen Y-T, *et al.* Amelioration of proximal renal tubular dysfunction in type I glycogen storage disease with dietary therapy. *N Engl J Med* 1990; **323:** 590–3.
7. Rake JP, *et al.* Guidelines for management of glycogen storage disease type I - European study on glycogen storage disease type I (ESGSD I). *Eur J Pediatr* 2002; **161** (suppl): S112–S119.

Preparations

BP 2008: Compound Zinc Paste; Dithranol Paste; Talc Dusting Powder; ***USP 31:*** Absorbable Dusting Powder; Topical Starch.

Proprietary Preparations (details are given in Part 3)

Austral.: Karicare Food Thickener; ***Mex.:*** Panaline†; ***NZ:*** Karicare Food Thickener.

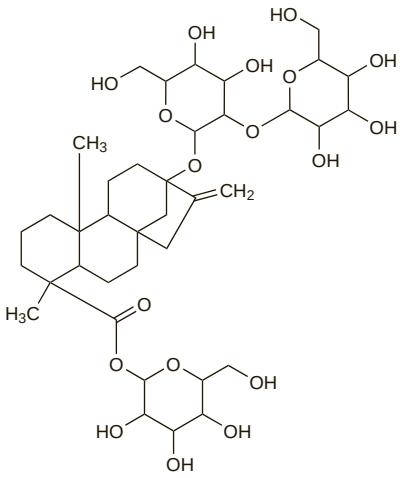
Multi-ingredient: ***Austral.:*** Nucolox; ZSC; ***Braz.:*** Talco Alivio†; ***Fr.:*** Magic Mix; Poudre du Marcheur; ***India:*** Feel Chill; ***Israel:*** Baby Paste; ***Ital.:*** Lenipasta†; ***NZ:*** Lamisil Odor Eze; Nucolox†; ***Port.:*** Cuidaderma; ***S.Afr.:*** SB Universal Ointment; ***UK:*** Herbheal Ointment; Psorasolv; Skin Clear; ***USA:*** Balmex Baby; Desitin with Zinc Oxide; Diaparene Corn Starch; Mexsana; Norforms†; Paladin; Yeast-X†.

Stevioside

Estevióside; Eupatorin; Rebaudin; Stevin; Steviosin.

$C_{38}H_{60}O_{18}$ = 804.9.

CAS — 57817-89-7.



Pharmacopoeias. In *Chin.*

Profile

Stevioside is a glycoside extracted from the leaves of yerba dulce, *Stevia rebaudiana* (Compositae). It has about 300 times the sweetness of sucrose and has been used as a sweetening agent in foods. Both the related glycoside rebaudioside A (rebiana), and an extract of the leaves of *Stevia rebaudiana* which contains these and other glycosides, have been used similarly. The use of stevioside or stevia leaves as a sweetener has been banned in some countries due to concerns about genotoxicity and possible effects on fertility.

◊ References.

1. Geuns JM. Stevioside. *Phytochemistry* 2003; **64:** 913–21.

Hypertension. The antihypertensive action of stevioside has been investigated. An oral dose of 250 mg three times daily was found to lower blood pressure in patients with mild to moderate hypertension,[1] and 500 mg three times daily decreased blood pressure and the incidence of left ventricular hypertrophy in patients with mild hypertension.[2]

1. Chan P, *et al.* A double-blind placebo-controlled study of the effectiveness and tolerability of oral stevioside in human hypertension. *Br J Clin Pharmacol* 2000; **50:** 215–20.
2. Hsieh M-H, *et al.* Efficacy and tolerability of oral stevioside in patients with mild essential hypertension: a two-year, randomized, placebo-controlled study. *Clin Ther* 2003; **25:** 2797–2808.

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Edulsan; Steviadulri.

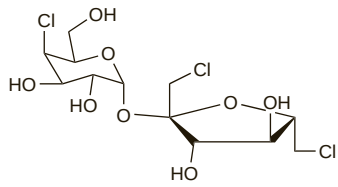
Multi-ingredient: ***Chile:*** Nature Complex Reduct-Te.

Sucralose *(BAN)*

Sucralosa; Sucralosum; TGS; Trichlorogalactosucrose. 1,6-Dichloro-1,6-dideoxy-β-D-fructofuranosyl 4-chloro-4-deoxy-α-D-galactopyranoside.

$C_{12}H_{19}Cl_3O_8$ = 397.6.

CAS — 56038-13-2.



Pharmacopoeias. In *USNF.*

USNF 26 (Sucralose). A white to off-white, crystalline powder. Freely soluble in water, in alcohol, and in methyl alcohol; slightly soluble in ethyl acetate. Store in a cool, dry place at a temperature not exceeding 21°.

Profile

Sucralose is used as a sweetening agent in foods, beverages, and pharmaceuticals. It has between about 300 and 1000 times the sweetening power of sucrose and is stable to heat. It has no food value and is noncariogenic.

◊ References.

1. Anonymous. Sucralose—a new artificial sweetener. *Med Lett Drugs Ther* 1998; **40:** 67–8.
2. Roberts A, *et al.* Sucralose metabolism and pharmacokinetics in man. *Food Chem Toxicol* 2000; **38** (suppl): S31–S41.

Preparations

Proprietary Preparations (details are given in Part 3)

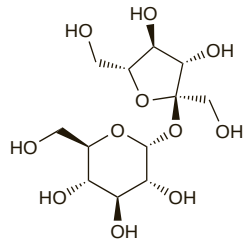
Chile: Sugafor.

Sucrose

Azúcar; Cane Sugar; Refined Sugar; Sacarosa; Saccharose; Saccharosum; Saccharum; Sacharosa; Sacharoza; Sacharozė; Sackaros; Sakkaroosi; Sucre; Sucrosum; Szacharóz; Zucker. β-D-Fructofuranosyl-α-D-glucopyranoside.

$C_{12}H_{22}O_{11}$ = 342.3.

CAS — 57-50-1.



Description. Sucrose is obtained from sugar-cane, *Saccharum officinarum* (Gramineae), sugar-beet, *Beta vulgaris* (Chenopodiaceae), and other sources.

Pharmacopoeias. In *Chin.*, *Eur.* (see p.vii), *Jpn*, and *Viet.* Also in *USNF.*

Br. also contains Compressible Sugar.

Eur. also includes Sugar Spheres.

USNF also includes Compressible Sugar, Confectioner's Sugar, and Sugar Spheres.

Ph. Eur. 6.2 (Sucrose). A white or almost white, crystalline powder or shiny, colourless or white or almost white crystals. Very soluble in water; slightly soluble in alcohol; practically insoluble in dehydrated alcohol.

USNF 26 (Sucrose). A sugar obtained from *Saccharum officinarum* (Gramineae), *Beta vulgaris* (Chenopodiaceae), and other sources. White, crystalline powder or lustrous, dry, colourless or white crystals. Soluble 1 in 0.5 of water, 1 in 0.2 of boiling water, and 1 in 170 of alcohol; practically insoluble in dehydrated alcohol.

Incompatibility. Sucrose may be contaminated by traces of heavy metals or sulfites and this can lead to incompatibility with other ingredients when it is used as a pharmaceutical excipient. Syrup preserved with hydroxybenzoates has been reported to be incompatible with a range of compounds.

Adverse Effects and Precautions

Sucrose consumption increases the incidence of dental caries.

Sucrose use should be avoided in patients with the glucose-galactose malabsorption syndrome, fructose intolerance, or sucrase-isomaltase deficiency. The intake of sucrose from dietary and other sources must be controlled in patients with diabetes mellitus.

Dietary sugar. The Panel on Dietary Sugars reviewed the evidence relating to sugars in the diet and the health of the population in the UK.[1]

No evidence was found that the consumption of most sugars naturally incorporated into the cellular structure of foods (intrinsic sugars) represented a threat to health and consideration was therefore mainly directed towards the dietary use of sugars not so incorporated (extrinsic sugars), of which sucrose was the principal non-milk extrinsic sugar.

There was extensive evidence suggesting that sugars were the most important dietary factor in the cause of dental caries and it was recommended that consumption of non-milk extrinsic sugars should be decreased.

It was considered that dietary sugars may contribute to the development of obesity, a condition which plays an important part in the aetiology of a number of diseases. For the majority of the population, who had normal plasma lipids and normal glucose tolerance, the consumption of sugars within the present range carried no special metabolic risks but those persons consuming more than about 200 g daily should replace the excess with starch. It was, however, recommended that those with special medical problems such as diabetes or hypertriglyceridaemia should restrict non-milk extrinsic sugar to less than about 20 to 50 g daily unless otherwise instructed by their own physician or dietitian. It was also concluded that current consumption of sugars, particularly sucrose, played no direct causal role in the development of cardiovascular (atherosclerotic coronary, peripheral, or cerebral vascular) disease, essential hypertension, or diabetes mellitus, and also had no significant specific effects on behaviour or psychological function. Although links between sucrose intake and certain other diseases (such as colorectal cancer, renal and biliary calculi, and Crohn's disease) had been proposed it was not felt that the evidence was adequate to justify any general dietary recommendations.

The conclusions of a joint FAO/WHO consultation on carbohydrates in human nutrition[2] were broadly in agreement with the above. However, they noted that the terms intrinsic and extrinsic sugars had not gained wide acceptance, either in the UK or other countries in the world, and they recommended against the use of these terms.

1. DoH. Dietary sugars and human disease: report of the panel on dietary sugars of the committee on medical aspects of food policy. *Report on health and social subjects 37.* London: HMSO, 1989.
2. FAO/WHO. *Carbohydrates in human nutrition: report of a joint FAO/WHO expert consultation. FAO Food and Nutrition 66.* Rome: Food and Agriculture Organization of the United Nations, 1998.

Effects on the kidneys. Acute renal failure with severe hyponatraemia has followed the use of granulated sugar to treat an infected pneumonectomy wound cavity.[1] It was noted that intravenous sucrose had long been known to be nephrotoxic in both *animal* models and man and that mild renal insufficiency before sucrose intoxication might have contributed to the nephrosis. Others, however, considered that the nephrotoxicity might have been caused by gentamicin, a solution of which had been used to irrigate the cavity before packing the wound.[2] Intravenous immunoglobulin preparations containing sucrose (as a stabilising agent) have also caused acute renal failure.[3,4]

1. Debure A, *et al.* Acute renal failure after use of granulated sugar in deep infected wound. *Lancet* 1987; **i:** 1034–5.
2. Archer H, *et al.* Toxicity of topical sugar. *Lancet* 1987; **i:** 1485–6.
3. Ahsan N, *et al.* Intravenous immunoglobulin-induced osmotic nephrosis. *Arch Intern Med* 1994; **154:** 1985–7.
4. Zhang R, Szerlip HM. Reemergence of sucrose nephropathy: acute renal failure caused by high-dose intravenous immune globulin therapy. *South Med J* 2000; **93:** 901–4.

Pharmacokinetics

Sucrose is hydrolysed in the small intestine by the enzyme sucrase to glucose and fructose, which are then absorbed. Sucrose is excreted unchanged in the urine when given intravenously.

Uses and Administration

Sucrose, a disaccharide, is used as a sweetening agent. It is commonly used as household sugar. If the sweetness of sucrose is taken as 100, fructose has a value of about 173, glucose 74, maltose 32, galactose 32, and lactose 16.

Sucrose is used as a tablet excipient and lozenge basis, and as a suspending and viscosity-increasing agent. Syrups prepared from concentrated solutions of sucrose form the basis of many linctuses. Treacle (molasses), a byproduct of sugar production that contains sucrose and minerals, has also been used.

Sucrose 30% eye drops have been used as a hypertonic agent for clearing corneal oedema.

Cough. Sucrose syrups are used as demulcents in linctuses used for treating cough (p.1547).

Diagnostic test for gastrointestinal damage. Sucrose is not absorbed from the healthy gastrointestinal tract. It has been proposed that the absorption of sucrose could be used as a diagnostic test of gastric damage.[1-3]

1. Sutherland LR, *et al.* A simple non-invasive marker of gastric damage: sucrose permeability. *Lancet* 1994; **343:** 998–1000.
2. Meddings JB, *et al.* Sucrose permeability: a novel means of detecting gastroduodenal damage noninvasively. *Am J Ther* 1995; **2:** 843–9.
3. Kawabata H, *et al.* Sucrose permeability as a means of detecting diseases of the upper digestive tract. *J Gastroenterol Hepatol* 1998; **13:** 1002–6.

Gastrointestinal spasm. For mention of a beneficial effect of sucrose solution in infant colic, see p.1696.

Glycogen storage disease type V. Glycogen storage disease type V (McArdle's disease) is a rare autosomal recessive disorder characterised by mutations in the gene for myophosphorylase, an enzyme essential for glycogenolysis.[1,2] Patients present with exercise-induced pain, cramps, fatigue, and myoglobinuria which, if severe, can cause acute renal failure.[2] Low-dose creatine supplementation (60 mg/kg daily) produced modest benefits during ischaemic exercise testing, but higher doses (150 mg/kg daily) worsened symptoms.[2] Sucrose 75 g by mouth improved exercise tolerance in 12 patients in a randomised crossover study.[1] Uncooked corn starch, either alone or with sucrose, has been suggested as an alternative in order to avoid any pronounced increase in serum insulin,[3] but this has been rejected on the basis that the necessary rapid increase in blood glucose will not be produced.[4]

1. Vissing J, Haller RG. The effect of oral sucrose on exercise tolerance in patients with McArdle's disease. *N Engl J Med* 2003; **349:** 2503–9.
2. Quinlivan R, Beynon RJ. Pharmacological and nutritional treatment for McArdle's disease (glycogen storage disease type V). Available in The Cochrane Database of Systematic Reviews; Issue 2. Chichester: John Wiley; 2008 (accessed 21/07/08).
3. Gaglia JL, Wolfsdorf JI. Oral sucrose and exercise tolerance in McArdle's disease. *N Engl J Med* 2004; **350:** 1575.
4. Vissing J, Haller RG. Oral sucrose and exercise tolerance in McArdle's disease. *N Engl J Med* 2004; **350:** 1575–6.

Hiccup. Giving a teaspoon of dry granulated sugar resulted in the immediate cessation of hiccup in 19 of 20 patients;[1] 12 of the patients had suffered from hiccup for less than 6 hours but in the remaining 8 persistent hiccup had been present for 24 hours to 6 weeks. The effect may be due to stimulation of the pharynx. An early protocol for the treatment of intractable hiccup (p.976) suggests that swallowing dry granulated sugar is one of the first treatments that should be tried.

1. Engleman EG, *et al.* Granulated sugar as treatment for hiccups in conscious patients. *N Engl J Med* 1971; **285:** 1489.

Pain. A systematic review[1] concluded that sucrose solutions could reduce physiological and behavioural indicators of stress and pain in neonates undergoing painful procedures although there had been some doubt expressed[2] over whether this indicated effective analgesia. The review[1] was unable to determine an optimal dose, but 1 mL of a 25% solution or 2 mL of a 50% solution has been reported to reduce crying time in premature[3] and full-term[4] infants, respectively, when given 2 minutes before heel-prick sampling. Similarly, 2 mL of a 75% sucrose solution by mouth reduced crying time in infants given intramuscular vaccines,[5] and 2 mL of oral sucrose 24% reduced pain scores in premature infants undergoing eye examinations for retinopathy of prematurity.[6] One literature review[7] suggested that a dose of 500 mg sucrose provided effective analgesia for neonates. However, a randomised study found pacifiers (dummies) to have a better analgesic effect than 2 mL of a 30% sucrose solution; a synergistic effect was found with a combination of sucrose and pacifiers.[8] Another review[9] recommended that, along with a pacifier, 0.1 to 0.4 mL of a 24% sucrose solution be given to premature infants, and up to 2 mL be given to term infants. Others have recommended the use of 0.5 mL/kg of a 33% sucrose solution (about 170 mg/kg), stating that more dilute solutions carry a risk of bacterial contamination.[10] The route by which sucrose solution is given may also be important: a reduced pain response was only noted after intraoral doses; giving it via a nasogastric tube was ineffective.[11]

A study in preterm infants found that, while there were no differences on neurobehavioural developmental outcomes between infants given repeated sucrose analgesia or placebo, higher number of doses of sucrose predicted lower scores in motor development, vigour, alertness and orientation. The authors postulated that repeated stimulation by sucrose may interfere with normal functioning and maturation of the preterm infant's endogenous opiate system, and cautioned against the routine use of sucrose analgesia in this population.[12] For choice of analgesic in children, see p.3.

1. Stevens B, *et al.* Sucrose for analgesia in newborn infants undergoing painful procedures. Available in The Cochrane Database of Systematic Reviews; Issue 3. Chichester: John Wiley; 2004 (accessed 08/11/05).
2. Anonymous. Pacifiers, passive behaviour, and pain. *Lancet* 1992; **339:** 275–6.
3. Ramenghi LA, *et al.* Reduction of pain response in premature infants using intraoral sucrose. *Arch Dis Child* 1996; **74:** F126–F128.
4. Haouari N, *et al.* The analgesic effect of sucrose in full term infants: a randomised controlled trial. *BMJ* 1995; **310:** 1498–1500.
5. Lewindon PJ, *et al.* Randomised controlled trial of sucrose by mouth for the relief of infant crying after immunisation. *Arch Dis Child* 1998; **78:** 453–6.
6. Gal P, *et al.* Efficacy of sucrose to reduce pain in premature infants during eye examinations for retinopathy of prematurity. *Ann Pharmacother* 2005; **39:** 1029–33.
7. Masters-Harte LD, Abdel-Rahman SM. Sucrose analgesia for minor procedures in newborn infants. *Ann Pharmacother* 2001; **35:** 947–52.
8. Carbajal R, *et al.* Randomised trial of analgesic effects of sucrose, glucose, and pacifiers in term neonates. *BMJ* 1999; **319:** 1393–7.
9. Prince WL, *et al.* Treatment of neonatal pain without a gold standard: the case for caregiving interventions and sucrose administration. *Neonatal Netw* 2004; **23:** 33–45.
10. Shann F. Suckling and sugar reduce pain in babies. *Lancet* 2007; **369:** 721–3.
11. Ramenghi LA, *et al.* "Sucrose analgesia": absorptive mechanism or taste perception. *Arch Dis Child Fetal Neonatal Ed* 1999; **80:** F146–F147.
12. Johnston CC, *et al.* Routine sucrose analgesia during the first week of life in neonates younger than 31 weeks' postconceptional age. *Pediatrics* 2002; **110:** 523–8.

Wound healing. Sugar, either in the form of granulated sugar[1-5] or pastes composed of caster sugar and icing sugar,[6,7] has been used successfully in the treatment of wounds (p.1585) including mediastinitis after cardiac surgery,[1,3] large abscesses and bed sores,[6,7] diabetic ulcers,[2,4] and recurrent bone infections after surgical debridement in patients with leprosy.[5] Debridement of the wound is believed to be due partly to the osmotic effect of sugar and partly to the mechanical cleansing action but it is not known how sugar stimulates granulation tissue to form.[6,7] Once granulation tissue is well established and the wound is shrinking, an alternative wound preparation, such as an alginate, hydrocolloid, or hydrogel, should be used as sugar pastes cause bleeding.[8] Sugar is also effective at deodorising malodorous wounds. The use of the combined caster and icing sugar pastes, of which details of the formulas used are provided in the original publications,[6,7] has been advocated as a way to overcome the problems of possible non-sterility and contamination of commercial granulated sugar.[6,7]

Honey (p.1948) has been used similarly.

1. Trouillet JL, *et al.* Use of granulated sugar in treatment of open mediastinitis after cardiac surgery. *Lancet* 1985; **ii:** 180–4.
2. Quatraro A, *et al.* Sugar and wound healing. *Lancet* 1985; **ii:** 664.
3. De Feo M, *et al.* Treatment of recurrent postoperative mediastinitis with granulated sugar. *J Cardiovasc Surg* 2000; **41:** 715–19.
4. Kilic A. Healing of diabetic ulcers with granulated sugar. *Plast Reconstr Surg* 2001; **108:** 585.
5. Grauwin MY, *et al.* Comment guérir les ostéites et ostéo-arthrites des extrémités des anciens malades de la lèpre par le sucre cristallisé alimentaire? *Acta Leprol* 1999; **11:** 147–52.
6. Gordon H, *et al.* Sugar and wound healing. *Lancet* 1985; **ii:** 663–4.
7. Middleton KR, Seal D. Sugar as an aid to wound healing. *Pharm J* 1985; **235:** 757–8.
8. Seal DV, Middleton K. Healing of cavity wounds with sugar. *Lancet* 1991; **338:** 571–2.

Preparations

BP 2008: Compressible Sugar; Syrup;
Ph. Eur.: Sugar Spheres;
USNF 26: Compressible Sugar; Confectioner's Sugar; Sugar Spheres; Syrup.

Proprietary Preparations (details are given in Part 3)
Fr.: Gelodiet.

Multi-ingredient: ***Arg.:*** Equalsweet; Sucaryl; ***Austral.:*** Nyal Chesty Cough†; ***Irl.:*** Venos Expectorant; ***Jpn:*** U-Pasta; ***S.Afr.:*** Emetrol; ***UK:*** Honey & Molasses; Venos Cough Mixture; Venos Expectorant.

Sucrose Polyesters

Sacarosa, poliésteres de la.

Profile

A sucrose polyester that is a mixture of hexa-, hepta-, and octafatty acid esters of sucrose is used as a nondigestible fat substitute by the food industry. Fat substitutes have been promoted as part of a strategy to reduce fat and calories in the diet to aid bodyweight control.

Possible adverse effects of sucrose polyesters are flatulence, anal leakage, abdominal cramps, and loose bowel movements. They may also reduce the absorption of fat-soluble vitamins.

◊ References.

1. Cotton JR, *et al.* Replacement of dietary fat with sucrose polyester: effects on energy intake and appetite control in non-obese males. *Am J Clin Nutr* 1996; **63:** 891–6.
2. Goldman P. Olestra: assessing its potential to interact with drugs in the gastrointestinal tract. *Clin Pharmacol Ther* 1997; **61:** 613–18.
3. Cheskin LJ, *et al.* Gastrointestinal symptoms following consumption of olestra or regular triglyceride potato chips: a controlled comparison. *JAMA* 1998; **279:** 150–2.
4. Sandler RS, *et al.* Gastrointestinal symptoms in 3181 volunteers ingesting snack foods containing olestra or triglycerides. *Ann Intern Med* 1999; **130:** 253–61.
5. Bray GA, *et al.* A 9-mo randomized clinical trial comparing fat-substituted and fat-reduced diets in healthy obese men: the Ole Study. *Am J Clin Nutr* 2002; **76:** 928–34.

Preparations

Proprietary Preparations (details are given in Part 3)
India: Heartfelt†.

Sunflower Oil

Aceite de girasol; Auringonkukkaöljy; Helianthi annui oleum; Helianthi Oleum; Huile de Tournesol; Napraforgóolaj; Olej słonecznikowy; Oleum Helianthi; Saulėgrąžų aliejus; Slunečnicový olej; Solrosolja; Sonnenblumenöl; Sunflowerseed Oil; Tournesol, huile de.

Pharmacopoeias. In *Eur.* (see p.vii). Also in *USNF.*
Ph. Eur. 6.2 (Sunflower Oil, Refined; Helianthi Annui Oleum Raffinatum). The fatty oil obtained from the seeds of *Helianthus annuus* by mechanical expression or by extraction and then refined. A suitable antoxidant may be added. A clear, light yellow liquid. Practically insoluble in water and in alcohol; miscible with petroleum spirit (b.p.: 40° to 60°). Store in well-filled airtight containers. Protect from light.
USNF 26 (Sunflower Oil). A refined fixed oil obtained from the seeds of the sunflower plant *Helianthus annuus* (Asteraceae alt. Compositae). Specific gravity between 0.914 and 0.924 at 20°. Store in airtight containers. Protect from light.

Profile

Sunflower oil is the fixed oil expressed from the fruits of *Helianthus annuus.* It is used as a salad oil and in pharmaceutical preparations. It is rich in linoleic acid (p.2308).

Multiple sclerosis. As discussed on p.892, the role of dietary lipids in multiple sclerosis remains to be proven,[1] although many patients modify their diets and take supplements of sunflower and other oils. One study showed a reduction in severity and duration of relapse in patients taking linoleic acid supplements (as sunflower oil).[2] Another[3] reported benefit in patients who limited their intake of dietary saturated fatty acids and supplemented their diet with polyunsaturated fatty acids. A systematic review[4] of the relationship between dietary interventions (including linoleic acid given as sunflower oils) and multiple sclerosis concluded that there was insufficient evidence to determine their benefits or risks.

1. Anonymous. Lipids and multiple sclerosis. *Lancet* 1990; **336:** 25–6.
2. Millar JHD, *et al.* Double-blind trial of linoleate supplementation of the diet in multiple sclerosis. *BMJ* 1973; **1:** 765–8.
3. Swank RL, Dugan BB. Effect of low saturated fat diet in early and late cases of multiple sclerosis. *Lancet* 1990; **336:** 37–9.
4. Farinotti M, *et al.* Dietary interventions for multiple sclerosis. Available in The Cochrane Database of Systematic Reviews; Issue 1. Chichester: John Wiley; 2007 (accessed 22/04/08).

Preparations

Proprietary Preparations (details are given in Part 3)
Port.: Oleoban†.

Multi-ingredient: ***Arg.:*** Alofresh†; Prueboi†; ***Austral.:*** Snor-Away†; ***Austria:*** Pelsana Med; Piniment; ***Fr.:*** Oropur; ***Hong Kong:*** Sanjukei Panax Ginseng; ***India:*** Efaderm; ***Ital.:*** DHA; ***NZ:*** Snorenz; ***Port.:*** Oleoban Composto†; Oleoban Gel†; ***Switz.:*** Huile de millepertuis A. Vogel (huile de St. Jean); Pelsano; ***UK:*** Goodnight StopSnore; Snor-Away.

Tagatose

D-*lyxo*-hexulose; D-Tagatose; Tagatosum; Tagatoza.
$C_6H_{12}O_6$ = 180.2.
CAS — 87-81-0 (tagatose); 17598-81-1 (DL-tagatose).

Pharmacopoeias. In *USNF.*
USNF 26 (Tagatose). Tagatose is a ketohexose, an epimer of fructose inverted at C-4. It is obtained from galactose by isomerisation under alkaline conditions in the presence of calcium. White or almost white crystals, having a sweet taste. Very soluble in water; very slightly soluble in alcohol.

Profile

Tagatose is a naturally occurring monosaccharide, produced commercially from lactose. It is 92% as sweet as sucrose, but contains fewer calories. It may be used as a sweetener in foods, beverages, toothpaste, mouthwashes, and medicines.

Thaumatin *(BAN)*

E957; Katemfe; Taumatina.
CAS — 53850-34-3.

Profile

Thaumatin is a protein extracted from the fruit of *Thaumatococcus daniellii* (Marantaceae); it is a mixture of polypeptides thaumatin I and thaumatin II, each consisting of 207 amino acid residues and having a molecular weight of about 22 000. The amino-acid range excludes histidine. Thaumatin is an odourless, cream-coloured powder with an intensely sweet taste. The sweetness builds up gradually but persists for up to an hour, and is considered to be by far the sweetest of such compounds in use, having 2000 to 3000 times the sweetness of sucrose. It is approved as a sweetener and flavour modifier in foods, beverages, and pharmaceuticals.