

Preparations**Proprietary Preparations** (details are given in Part 3)**Multi-ingredient:** **Ger.:** Chologutt-N†; **Spain:** Natusor Somnisedan†; Sedasor†.**Spike Lavender Oil**

Alhucema, aceite esencial de; Huile Essentielle d'Aspic; Ol. Lavand. Spic.; Oleum Lavandulae Spicatae; Spicae Actheroleum; Spike Oil.

Pharmacopoeias. In *Fr.***Profile**Spike lavender oil is the volatile oil from *Lavandula latifolia* (Labiatae). It resembles lavender oil (p.2331) in its properties and is mainly used in perfumery. It is also used in aromatherapy. Hypersensitivity reactions may occur.**Preparations****Proprietary Preparations** (details are given in Part 3)**Austria:** Tavipec; **Ger.:** Bronchobest†; **Thal.:** Tavipec.**Multi-ingredient:** **Austria:** Novipeic; Talsamag; **Rus.:** Carmolis (Кармолис)†; **S.Afr.:** Balsam Vita GEEL; Balsam Vita ROOI; Balsam Vita WIT; Stuidruppels; **Switz.:** Baume du Chalet; Fortalis.**Spirulina**

Espirulina.

Спирulina

Profile

Spirulina is a species of blue-green algae that has been promoted as an anorectic, but there is no convincing evidence that it is safe or effective for this indication.

Preparations**Proprietary Preparations** (details are given in Part 3)**Fr.:** Phycocyan†; **India:** Fitness; **Indon.:** Spirumate; **UK:** Biolina.**Multi-ingredient:** **Arg.:** No-Gras; **Austral.:** Cal Alkyline; Rubus Complex†; **Chile:** Natur-Zin; Natursel-C; Reducform-F; **Fr.:** Thalgo Tonic; **India:** Vitexid; **Malaysia:** Eyebright Plus†.**Star Anise**

Anís Estrellado; Anís Étoilé; Anisi stellati fructus; Anisum Badium; Anisum Stellatum; Badiana; Badiane; Badiane de Chine; Badyánik-ový ploid; Chinese Star Anise; Csillagánizs; Owoc anyżu gwiaździstego; Star Anise Fruit; Sternanis; Stjarnanis; Tähtianis; Žvaigždanyžiu vaisiai.

NOTE. Distinguish from Japanese star anise.

Pharmacopoeias. In *Chin.*, and *Eur.* (see p.vii).**Ph. Eur. 6.2** (Star Anise; Anisi Stellati Fructus). The dried composite fruit of *Illicium verum*, containing not less than 7% v/w of essential oil with reference to the anhydrous drug and a minimum 86.0% of *trans*-anethole in the essential oil. Protect from light.**Profile**The fruit of star anise, *Illicium verum* (Illiciaceae), is used as an expectorant for catarrh and as a gastrointestinal antispasmodic. It is used with thyme (p.2401) in herbal preparations for colds and upper respiratory-tract disorders. It is also used as a culinary spice.

Star anise is the source of star anise oil (below). It is also the source of shikimic acid, which is used in the production of the anti-influenza drug oseltamivir (p.900).

Adulteration of star anise with Japanese star anise (shikimi fruits; *I. anisatum*) has been responsible for a number of cases of neurotoxicity (see below). Import restrictions have been implemented in the EU. The problem is further complicated because the name *I. anisatum* has been applied to *I. verum*.**Adverse effects.** Neurotoxicity has been associated with the use of star anise infusions in infants.¹⁻³ The toxicity is attributed to adulteration or contamination of Chinese star anise (*Illicium verum*) with Japanese star anise (*I. anisatum*) which contains toxic sesquiterpene lactones such as anisatin.

- Garzo Fernandez C, et al. Casos de enfermedad de sintomatología neurológica asociados al consumo de anís estrellado empleado como carminativo. *An Esp Pediatr* 2002; **57**: 290-4.
- Minodier P, et al. Intoxicación aguda par la badiane chez Le nourrisson. *Arch Pediatr* 2003; **10**: 619-21.
- Ize-Ludlow D, et al. Neurotoxicities in infants seen with the consumption of star anise tea. Abstract: *Pediatrics* 2004; **114**: 1330. Full version: <http://pediatrics.aappublications.org/cgi/content/full/114/5/e653> (accessed 04/05/06)

Preparations**Proprietary Preparations** (details are given in Part 3)**Multi-ingredient:** **Braz.:** Dorveran†; Ductoveran; Elixir 914†; **Cz.:** Naturland Grosser Swedenbitter†; **Ital.:** Relaxoc; **Spain:** Digestovital†; **Switz.:** Tisane laxative; Tisane pectorale et antitussive; **Venez.:** Atrobel; Cloverin†; Ervossil.**Star Anise Oil**

Anisi stellati aetheroleum; Anisi Stellati Etheroleum; Badiane, huile essentielle de; Badyániková silice; Oleum Badianae; Stjarn-anisolja; Tähtianisöly; Žvaigždanyžiu eterinis aliejus.

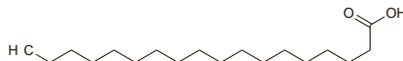
Pharmacopoeias. In *Eur.* (see p.vii). *USNF* includes star anise oil under the title Anise Oil.**Ph. Eur. 6.2** (Star Anise Oil; Anisi Stellati Aetheroleum). An essential oil obtained by steam distillation from the dry ripe fruits of *Illicium verum*. It contains 0.2 to 2.5% linalol, 0.5 to 6.0% estragole, less than 0.3% α -terpineol, 0.1 to 0.5% *cis*-anethole, 86 to 93% *trans*-anethole, 0.1 to 0.5% anisaldehyde, and 0.1 to 3.0% foeniculin. A clear, colourless or pale yellow liquid. Relative density 0.979 to 0.985. F.p. 15° to 19°. Store in well-filled, airtight containers at a temperature not exceeding 25°. Protect from light.**USNF 26** (Anise Oil). The volatile oil distilled with steam from the dried, ripe fruit of *Pimpinella anisum* (Apiaceae) or from the dried ripe fruit of *Illicium verum* (Illiciaceae). Congealing temperature not lower than 15°. Soluble 1 in 3 of alcohol (90%). Store in well-filled airtight containers. If solid material has separated, carefully warm the oil until it is completely liquefied, and mix before using.**Profile**

Star anise oil is included in preparations for the treatment of coughs and cold symptoms. It is used in the pharmaceutical and food industries as an alternative to anise oil (see p.2258). It is also used in aromatherapy.

Preparations**Proprietary Preparations** (details are given in Part 3)**Multi-ingredient:** **Ger.:** Eupatal†; Makatussin Tropfen; **Switz.:** Foral†; Liberal Baby N; Odontal; **Turk.:** Sandolin.**Stearic Acid**

Acide stéarique; Acido Estéarico; Acidum stearicum; Estéarico, ácido; Kwaz stearowy; Kwaz stearynowy; Kyselina stearová; Octadecanoic Acid; Stearinihappo; Stearino rūgštis; Stearinsäure; Stearinsyra; Sztearinasyv.

CAS — 57-11-4 (stearic acid); 57-10-3 (palmitic acid).



NOTE. Stearic acid is sometimes incorrectly called 'stearine' in commerce.

Pharmacopoeias. In *Chin.*, *Eur.* (see p.vii), and *Jpn.* Also in *USNF*.*USNF* also includes a purified form.**Ph. Eur. 6.2** (Stearic Acid). It is obtained from fat or oils from a vegetable or animal source and is a mixture consisting mainly of stearic acid (C₁₈H₃₆O₂ = 284.5) and palmitic acid (C₁₆H₃₂O₂ = 256.4). Stearic Acid 50 contains 40 to 60% stearic acid, the sum of the contents of stearic and palmitic acids being a minimum 90%. Stearic Acid 70 contains 60 to 80% stearic acid, the sum of the contents of stearic and palmitic acids being a minimum 90%. Stearic Acid 95 contains a minimum of 90% stearic acid, the sum of the contents of stearic and palmitic acids being a minimum 96%. White or almost white, waxy, flaky crystals, white or almost white, hard masses, or a white or yellowish-white powder. Practically insoluble in water; soluble in alcohol and in petroleum spirit (50° to 70°).**USNF 26** (Stearic Acid). A mixture of stearic acid and palmitic acid, the content of stearic acid being not less than 40%, and the sum of the two not less than 90%. Congealing point not lower than 54°. Hard, white or faintly yellowish, somewhat glossy and crystalline solid, or white or yellowish-white powder, with a slight odour, suggesting tallow. Practically insoluble in water; soluble 1 in 20 of alcohol, 1 in 2 of chloroform, and 1 in 3 of ether.**USNF 26** (Purified Stearic Acid). It contains not less than 90% stearic acid and not less than 96% of stearic and palmitic acids. Congealing point 66° to 69°.**Profile**

Stearic acid is used as a lubricant in making tablets and capsules. It is also used as an emulsifying and solubilising agent. Various stearates are also used as pharmaceutical aids (see Nonionic Surfactants, p.1914, and Soaps and other Anionic Surfactants, p.2138).

Stone Root

Collinsonia; Collinsonia del Canadá; Hardhack; Heal-all; Knob Root.

ProfileStone root, the root and rhizome of *Collinsonia canadensis* (Labiatae), has diuretic and litholytic properties and is used in the

treatment of renal and urinary calculi. It is also used as an astringent for gastrointestinal disorders. It has also been included in herbal preparations for haemorrhoids.

Homeopathy. Stone root has been used in homeopathic medicines under the following names: *Collinsonia canadensis*; *Collin. c.***Preparations****Proprietary Preparations** (details are given in Part 3)**Multi-ingredient:** **UK:** Piletabs.**Storax**

Balsamum Sytrax Liquidus; Estoraque; Estoraque Líquido; Liquid Storax; Stytrax.

Pharmacopoeias. In *Chin.* and *US*.**USP 31** (Storax). The balsam obtained from the trunk of *Liquidambar orientalis* (Levant storax) or *L. styraciflua* (American storax) (Hamamelidaceae). It is a semiliquid greyish to greyish-brown, sticky, opaque mass depositing on standing a heavy dark brown layer (Levant storax), or semisolid, sometimes a solid mass, softened by gently heating (American storax). It is transparent in thin layers, has a characteristic odour, and is more dense than water.

Insoluble in water; soluble, usually incompletely, in an equal weight of warm alcohol; soluble in acetone, in carbon disulfide, and in ether, some insoluble residue usually remaining.

Profile

Storax has actions similar to those of Peru balsam (p.2365). Purified storax or prepared storax was formerly applied as an ointment in the treatment of parasitic skin diseases. Storax has a mild antiseptic action and is an ingredient of some preparations for upper respiratory-tract disorders and for application to skin and mucous membranes. Skin sensitisation has been reported.

Preparations**BP 2008:** Benzoin Inhalation; Compound Benzoin Tincture;**BPC 1954:** Compound Iodoform Paint;**USP 31:** Compound Benzoin Tincture.**Proprietary Preparations** (details are given in Part 3)**Multi-ingredient:** **Fr.:** Phylitolthe†; **NZ:** Frador; **S.Afr.:** Turulington Tincture; **UK:** Frador.**Stramonium**

Datura; Durmanový list (stramonium leaf); Dumaropių lapai (stramonium leaf); Estramonio; Hulluruohonlehti (stramonium leaf); Inferno; Jamestown Weed; Jimson Weed; Maszlaglevél (stramonium leaf); Stechapfel; Stramoine; Stramoine, feuille de (stramonium leaf); Stramonii folium (stramonium leaf); Stramoniumblad (stramonium leaf); Thornapple. ATC Vet — Q0R03BB03.

NOTE. The terms *Datura*, *Datura Herb*, and *Datura Leaf* have been applied to preparations of various species of the genus *Datura* including *Datura metel*.

The following terms have been used as 'street names' (see p.vi) or slang names for various forms of stramonium: Devil's weed; Loco weed.

Pharmacopoeias. *Eur.* (see p.vii) includes a monograph for Stramonium Leaf and Prepared Stramonium.**Ph. Eur. 6.2** (Stramonium Leaf; Stramonii Folium). It consists of the dried leaf or the dried leaf, flowering tops and occasionally fruit-bearing tops of *Datura stramonium* and its varieties. It contains not less than 0.25% of total alkaloids, calculated as hyoscyamine. The alkaloids consist mainly of hyoscyamine with varying proportions of hyoscyne. It has an unpleasant odour. Protect from light and moisture.

The BP 2008 directs that when stramonium leaf or powdered stramonium leaf is prescribed, prepared stramonium shall be dispensed.

Ph. Eur. 6.2 (Stramonium, Prepared; Stramonii Pulvis Normatus). It is stramonium leaf powder adjusted to contain 0.23 to 0.27% of total alkaloids, calculated as hyoscyamine. Store in airtight containers. Protect from light.**Adverse Effects, Treatment, and Precautions**

As for Atropine Sulfate, p.1219.

Abuse. Some reports¹⁻⁵ of poisoning after abuse of *Datura stramonium* or its preparations.

- Goody JM. Stramonium intoxication: review of symptomatology in 212 cases. *JAMA* 1972; **221**: 585-7.
- Shervette RE, et al. Jimson "Loco" weed abuse in adolescents. *Pediatrics* 1979; **63**: 520-3.
- Anonymous. Jimson weed poisoning—Texas, New York, and California, 1994. *MMWR* 1995; **44**: 41-4.
- Salen P, et al. Effect of phosphygmine and gastric lavage in a *Datura stramonium*-induced anticholinergic poisoning epidemic. *Am J Emerg Med* 2003; **21**: 316-17.
- Boumba VA, et al. Fatal poisoning from ingestion of *Datura stramonium* seeds. *Vet Hum Toxicol* 2004; **46**: 81-2.

Effects on the eyes. Anisocoria (unequal dilatation of the pupils) developed after accidental entry of a piece of jimson weed (*Datura stramonium*) into a patient's eye while gardening.¹

- Savitt DL, et al. Anisocoria from Jimsonweed. *JAMA* 1986; **255**: 1439-40.

Uses and Administration

Stramonium has the actions of atropine (p.1219). It has been given with other drugs in oral and rectal dosage forms for respiratory-tract disorders. It has also been smoked in cigarettes or burnt in powders and the fumes inhaled but the irritation produced by the fumes may aggravate bronchitis.

Homoeopathy. Stramonium has been used in homoeopathic medicines under the following names: *Datura stramonium*; *Stram*.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: **Austral:** Potassium Iodide and Stramonium Compound†; **Braz:** Asmatron†; Expectol†; Teutos†.

Streptodornase (BAN, rINN)

Streptodornasa; Streptococcal Deoxyribonuclease; Streptodor-naasi; Streptodornasa; Streptodornasum.

Стрептодорназа

CAS — 37340-82-2.

Profile

Streptodornase is an enzyme obtained from cultures of various strains of *Streptococcus haemolyticus*. It catalyses the depolymerisation of polymerised deoxyribonucleoproteins. It liquefies the viscous nucleoprotein of dead cells; it has no effect on living cells. It is used with streptokinase in the topical treatment of lesions, wounds, and other conditions that require the removal of clots or purulent matter; the combination may also be used to dissolve clots in the bladder or in urinary catheters.

It has also been given orally with streptokinase and sometimes with antibacterials, for its supposed benefit in reducing oedema and inflammation associated with trauma and infection.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: **Arg:** Varidasa†; **Austral:** Varidase†; **Austria:** Varidase; **Denm:** Varidase; **Fin:** Varidase; **Ger:** Varidase; **Irl:** Varidase†; **Ital:** Varidase†; **Mex:** Varidasa; **Norw:** Varidase; **Pol:** Distreptaza; **Port:** Varidasa†; **Spain:** Ernodasa; Varidasa; **Swed:** Varidase; **UK:** Varidase†.

Strontium Chloride

Estroncio, cloruro de; Stronsiyum Klorür; Strontii Chloridum; Strontiumklorid; Strontiumkloridi.

SrCl₂·6H₂O = 266.6.

CAS — 10476-85-4 (anhydrous strontium chloride).

Profile

Strontium chloride is used as a 10% toothpaste for the relief of dental hypersensitivity. Strontium acetate has been used similarly.

Preparations

Proprietary Preparations (details are given in Part 3)

Arg: Sensodyne Original; **Austria:** Sensodyne med; **Braz:** Sensodyne Formula Original; **Canad:** Sensodyne; **Chile:** Dentoxil; **Switz:** Sensodent†; **Turk:** Sensodyne Mint; **UK:** Sensodyne Original; **USA:** Sensodyne-SC; **Venez:** Sencia; Tekdent†.

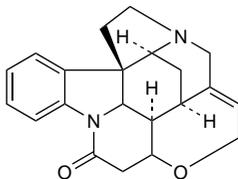
Multi-ingredient: **Arg:** Esme Topico; **Canad:** Reversa UV; **Ital:** Ptitene; **Singapore:** 2Sensitve†.

Strychnine ⊗

Estricnina; Strychnina. Strychnidin-10-one.

C₂₁H₂₂N₂O₂ = 334.4.

CAS — 57-24-9.



Description. Strychnine is an alkaloid obtained from the seeds of *nux vomica* (p.2355) and other species of *Strychnos*.

Strychnine Hydrochloride ⊗

Estricnina, hidrocloreuro de; Strych. Hydrochlor; Strychninae Hydrochloridum.

C₂₁H₂₂N₂O₂·HCl·2H₂O = 406.9.

CAS — 1421-86-9 (anhydrous strychnine hydrochloride); 6101-04-8 (strychnine hydrochloride dihydrate).

The symbol † denotes a preparation no longer actively marketed

Strychnine Nitrate ⊗

Azotato de Estricnina; Estricnina, nitrato de; Nitrato de Estricnina; Strychninae Nitras; Strychnini Nitras; Strychninum Nitricum; Strykniininitraatti; Strykniininitrat.

C₂₁H₂₂N₂O₂·HNO₃ = 397.4.

CAS — 66-32-0.

Pharmacopeias. In *Chin*.

Strychnine Sulfate ⊗

Estricnina, sulfato de; Strychninae Sulphas; Strychnine Sulphate; Strychninum Sulfonicum; Sulfato de Estricnina.

(C₂₁H₂₂N₂O₂)₂·H₂SO₄·5H₂O = 857.0.

CAS — 60-41-3 (anhydrous strychnine sulfate); 60491-10-3 (strychnine sulfate pentahydrate).

Pharmacopeias. In *Fr* and *Viet*.

Adverse Effects

The symptoms of strychnine poisoning are mainly those arising from stimulation of the CNS. Early signs occurring within 15 to 30 minutes of ingestion include tremors, slight twitching, and stiffness of the face and limbs. Painful convulsions develop and may be triggered by minor sensory stimuli; since consciousness is not impaired patients may be extremely distressed. All forms of sensation are heightened. The body becomes arched backwards in hyperextension with the head retracted, arms and legs extended, fists clenched, and the feet turned inward. The jaw is rigidly clamped and contraction of the facial muscles produces a characteristic grinning expression known as 'risus sardonius'. The convulsions may recur repeatedly and are interspersed with periods of relaxation. If not treated adequately, few patients survive more than 5 episodes of convulsions, death usually occurring due to respiratory and cardiac arrest. Fatalities in adults have occurred with doses as little as 16 mg.

Secondary effects arising from the severe spasms include lactic acidosis, rhabdomyolysis, renal failure, hyperthermia, hyperkalaemia, and dehydration.

Poisoning, References.

- O'Callaghan WG, et al. Unusual strychnine poisoning and its treatment: report of eight cases. *BMJ* 1982; **285**: 478.
- Blain PG, et al. Strychnine poisoning: abnormal eye movements. *J Toxicol Clin Toxicol* 1982; **19**: 215-17.
- Boyd RE, et al. Strychnine poisoning: recovery from profound lactic acidosis, hyperthermia, and rhabdomyolysis. *Am J Med* 1983; **74**: 507-12.
- Burn DJ, et al. Strychnine poisoning as an unusual cause of convulsions. *Postgrad Med J* 1989; **65**: 563-4.
- Yamarick W, et al. Strychnine poisoning in an adolescent. *J Toxicol Clin Toxicol* 1992; **30**: 141-8.
- Heiser JM, et al. Massive strychnine intoxication: serial blood levels in a fatal case. *J Toxicol Clin Toxicol* 1992; **30**: 269-83.
- Nishiyama T, Nagase M. Strychnine poisoning: natural course of a nonfatal case. *Am J Emerg Med* 1995; **13**: 172-3.
- Katz J, et al. Strychnine poisoning from a Cambodian traditional remedy. *Am J Emerg Med* 1996; **14**: 475-7.
- Hernandez AF, et al. Acute chemical pancreatitis associated with nonfatal strychnine poisoning. *J Toxicol Clin Toxicol* 1998; **36**: 67-71.
- Greene R, Meatherall R. Dermal exposure to strychnine. *J Anal Toxicol* 2001; **25**: 344-7.
- Wood D, et al. Case report: survival after deliberate strychnine self-poisoning, with toxicokinetic data. *Crit Care* 2002; **6**: 456-9.
- Scheffold N, et al. Strychninvergiftung. *Dtsch Med Wochenschr* 2004; **129**: 2236-8.
- Shadnia S, et al. A case of acute strychnine poisoning. *Vet Hum Toxicol* 2004; **46**: 76-9.

Treatment of Adverse Effects

The main aim of therapy in strychnine poisoning is the prompt prevention or control of convulsions and asphyxia. Activated charcoal should be given if the patient presents within 1 hour of ingestion. Convulsions should be controlled or prevented by diazepam or lorazepam. Intubation and assisted respiration may be required. Should benzodiazepines fail then phenytoin or phenobarbital may be tried. All unnecessary external stimuli should be avoided and if possible the patient should be kept at rest in a quiet darkened room. Patients should be monitored for any secondary effects such as metabolic acidosis so that appropriate symptomatic treatment can be given.

Uses and Administration

Strychnine competes with glycine, which is an inhibitory neurotransmitter; it thus exerts a central stimulant effect by blocking an inhibitory activity.

Strychnine was formerly used as a bitter and analeptic but is now mainly used under strict control as a rodenticide. It has also been used as a mole poison, although this use is banned in some countries including the UK. Strychnine has been used in multi-ingredient preparations for the treatment of ophthalmic and urinary-tract disorders. It has also been tried in the treatment of nonketotic hyperglycaemia.

Nonketotic hyperglycaemia. Nonketotic hyperglycaemia (also known as glycine encephalopathy) is an inborn defect in the enzyme system responsible for the metabolism of glycine. It is characterised by raised concentrations of glycine in plasma, CSF, and urine. Symptoms of glycine accumulation include res-

piratory distress, muscular hypotonia, seizures, vomiting, and extreme lethargy. Mental retardation and early infant death are common.

Sodium benzoate can reduce plasma-glycine concentrations to near normal¹ but is relatively ineffective in reducing CSF levels or in preventing mental retardation.² Strychnine, a glycine antagonist, has been of some benefit in counteracting its CNS effects.³⁻⁵ However, even treatment with both drugs may be ineffective in severe cases⁶ and may ultimately have little effect on the course of the disease.⁷ Glycine is reported to stimulate *N*-methyl-D-aspartate (NMDA) receptors in the CNS and the combination of strychnine and ketamine (an NMDA receptor antagonist) was of some benefit in a newborn infant with severe non-ketotic hyperglycaemia.⁸ Addition of low-dose dextromethorphan (an NMDA receptor antagonist) to treatment with sodium benzoate, arginine, carnitine, diazepam, and phenobarbital in an infant with nonketotic hyperglycaemia⁹ was associated with resolution of nystagmus and improvement in eye contact and interactive behaviour, without altering serum- or CSF-glycine concentrations. Dextromethorphan with sodium benzoate alone may also be helpful, although the combination is not uniformly effective.¹⁰ Treatment with sodium benzoate and dextromethorphan was beneficial in a 6-month-old child with mild atypical nonketotic hyperglycaemia,¹¹ although it was later shown that it was sodium benzoate that had the greatest effect on EEG and behavioural changes. A partial response to low-protein diet and sodium benzoate occurred in a patient with late-onset nonketotic hyperglycaemia; there was a more dramatic response when imipramine was added to therapy.¹²

- Van Hove JLK, et al. Benzoate treatment and the glycine index in nonketotic hyperglycaemia. *J Inher Metab Dis* 2005; **28**: 651-63.
- Krieger I, et al. Cerebrospinal fluid glycine in nonketotic hyperglycaemia: effect of treatment with sodium benzoate and a ventricular shunt. *Metabolism* 1977; **26**: 517-24.
- Ch'ien LT, et al. Glycine encephalopathy. *N Engl J Med* 1978; **298**: 687.
- Gitzelmann R, et al. Strychnine for the treatment of nonketotic hyperglycaemia. *N Engl J Med* 1978; **298**: 1424.
- Arneson D, et al. Strychnine therapy in nonketotic hyperglycaemia. *Pediatrics* 1979; **63**: 369-73.
- Sankaran K, et al. Glycine encephalopathy in a neonate. *Clin Pediatr (Phila)* 1982; **21**: 636-7.
- MacDermot KD, et al. Attempts at use of strychnine sulfate in the treatment of nonketotic hyperglycaemia. *Pediatrics* 1980; **65**: 61-4.
- Tegtmeyer-Metzdorf H, et al. Ketamine and strychnine treatment of an infant with nonketotic hyperglycaemia. *Eur J Pediatr* 1995; **154**: 649-53.
- Alenzadeh R, et al. Efficacy of low-dose dextromethorphan in the treatment of nonketotic hyperglycaemia. *Pediatrics* 1996; **97**: 924-6.
- Hamosh A, et al. Long-term use of high-dose benzoate and dextromethorphan for the treatment of nonketotic hyperglycaemia. *J Pediatr* 1998; **132**: 709-13.
- Neuberger JM, et al. Effect of sodium benzoate in the treatment of atypical nonketotic hyperglycaemia. *J Inher Metab Dis* 2000; **23**: 22-6.
- Wiltshire EJ, et al. Treatment of late-onset nonketotic hyperglycaemia: effectiveness of imipramine and benzoate. *J Inher Metab Dis* 2000; **23**: 15-21.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: **Chile:** Vigofortal; **Hung:** Artin†; **Israel:** Tesopalmed Forte cum Yohimbine; **Ital:** Neurofal†; **Pol:** Cardiamid-Coffein; **Port:** Hipersex†; **Thai:** Hemo-Cyto-Serum.

Suanzaorentang

Ziziphus Soup.

Profile

Suanzaorentang is a traditional Chinese remedy for anxiety and insomnia. It contains five herbs: suanzaoren (*Zizyphus spinosus*, Rhamnaceae), fuling (*Poria cocos*, Polyporaceae), gancao (*Glycyrrhiza uralensis*, Leguminosae), zhimu (*Anemarrhena asphodeloides*, Liliaceae), and chuanxiong (*Ligusticum chuanxiong*, Umbelliferae).

Subtilisin A

Subtilisin Carlsberg; Subtilopeptidase A.

Субтиллизин А

CAS — 9014-01-1 (subtilisin).

Profile

Subtilisins are a class of serine proteases isolated initially from *Bacillus subtilis* but which are also excreted by other *Bacillus* species. They are widely used in the manufacture of enzymatic detergents. Hypersensitivity reactions have been reported.

Subtilisin A, which is obtained from *Bacillus licheniformis*, is used as an enzymatic cleanser for contact lenses.

References.

- Lemiere C, et al. Isolated late asthmatic reaction after exposure to a high-molecular-weight occupational agent, subtilisin. *Chest* 1996; **110**: 823-4.

The symbol ⊗ denotes a substance whose use may be restricted in certain sports (see p.vii)