

Poisoning. References.

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3. Luckit J, et al. Thrombocytopenia associated with thallium poisoning. *Hum Exp Toxicol* 1990; **9**: 47–8.
4. Moore D, et al. Thallium poisoning. *BMJ* 1993; **306**: 1527–9.
5. Tabandeh H, Thompson GM. Visual function in thallium toxicity. *BMJ* 1993; **307**: 324.
6. Questel F, et al. Thallium-contaminated heroin. *Ann Intern Med* 1996; **124**: 616.
7. Tromme I, et al. Skin signs in the diagnosis of thallium poisoning. *Br J Dermatol* 1998; **138**: 321–5.
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10. Hoffman RS. Thallium toxicity and the role of Prussian blue in therapy. *Toxicol Rev* 2003; **22**: 29–40.
11. Thompson DF, Callen ED. Soluble or insoluble Prussian blue for radiocesium and thallium poisoning? *Ann Pharmacother* 2004; **38**: 1509–14.
12. Kuo H-C, et al. Acute painful neuropathy in thallium poisoning. *Neurology* 2005; **65**: 302–4.

Treatment of Adverse Effects

Gastric lavage should be considered if the patient presents within 1 hour of acute ingestion. Intensive supportive therapy is necessary.

Attempts have been made to increase the faecal and urinary excretion of thallium. A suspension of activated charcoal has been given to reduce intestinal absorption and enteric recycling. Prussian blue (p.1461) given orally as a drink or via a nasogastric tube is also used routinely. A purgative such as mannitol may be required with either activated charcoal or Prussian blue as constipation is common in severe thallium toxicity. Giving potassium chloride by mouth may mobilise thallium from the tissues but is hazardous, especially if given during the early stage as signs of poisoning may be aggravated. Traditional chelation therapy is not generally recommended for thallium poisoning.

Haemoperfusion, haemodialysis, or peritoneal dialysis have been reported to be effective in eliminating absorbed thallium, although clinical benefit is doubtful.

Uses and Administration

Thallium acetate was formerly used by mouth for depilation in ringworm and as an ingredient of depilatory creams but both systemic and local treatments have caused deaths, and it is no longer used for such purposes. It has also been used as a rodenticide and insecticide; thallium sulfate has been used similarly. The use of thallium salts is strictly regulated in many countries. However, use in industry could still constitute a hazard. Cases of malicious poisoning still occur occasionally.

Theobroma

Cacao or Cocoa Powder; Chocolate; Teobroma; Theobrom.

Pharmacopoeias. In *USNF*.

USNF 26 (Chocolate). A powder prepared from the roasted, cured kernels of the ripe seed of *Theobroma cacao* (Sterculiaceae).

Profile

Theobroma is used as a flavoured basis for tablets and lozenges. Theobroma oil (p.2033) is used as a basis for suppositories.

Breast feeding. The American Academy of Pediatrics¹ states that irritability or increased bowel activity have been reported in infants whose mothers ate excessive amounts of chocolate (16 ounces (about 450 g) or more daily).

1. American Academy of Pediatrics. The transfer of drugs and other chemicals into human milk. *Pediatrics* 2001; **108**: 776–89. Correction. *ibid.* 1029. Also available at: <http://aappolicy.aappublications.org/cgi/content/full/pediatrics%3b108/3/776> (accessed 08/07/04)

Preparations

USNF 26: Chocolate Syrup.

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: *Austria:* Asthmatee EF-EM-ES.

Theodrenaline Hydrochloride (BANM, rINN) ⓧ

H-8352; Hidrocloruro de teodrenalina; Noradrenaline Theophylline Hydrochloride; Théodrénaline, Chlorhydrate de; Theodrenalini Hydrochloridum. 7-[2-(3,4,8-Trihydroxyphenethylamino)ethyl]theophylline hydrochloride.

Теодреналина Гидрохлорид

$C_{17}H_{21}N_5O_5 \cdot HCl = 411.8$.

CAS — 13460-98-5 (theodrenaline); 2572-61-4 (theodrenaline hydrochloride).

ATC — C01CA23.

ATC Vet — QC01CA23.

Profile

Theodrenaline is mainly used as the hydrochloride in preparations with caffeine promoted for the treatment of hypotension.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: *Austria:* Akrinor; *Fr.:* Praxinor; *Ger.:* Akrinor†; *S.Afr.:* Akrinor; *Spain:* Bifort†.

Thioctic Acid

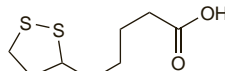
Acide thiocétique; Acidum thiocticum; Alpha Lipoic Acid; Kwas tioktynowy; Kyselina tioktová; Lipoic Acid; α -Lipoic Acid; Tióctico, ácido, 5-(1,2-Dithiolan-3-yl)valeric acid.

$C_8H_{14}O_2S_2 = 206.3$.

CAS — 62-46-4.

ATC — A16AX01.

ATC Vet — QA16AX01.



Pharmacopoeias. In *Eur.* (see p.vii) and *US*.

Ph. Eur. 6.2 (Thioctic Acid). A yellow, crystalline powder. M.p. about 61°. Very slightly soluble in water; very soluble in dimethylformamide; freely soluble in methyl alcohol. Protect from light.

USP 31 (Alpha Lipoic Acid). M.p. 60.0° to 62.0°.

Profile

Thioctic acid is used for its antioxidant effects in the treatment of diabetic neuropathy. It has been tried in the treatment of liver dysfunction and in subacute necrotising encephalopathy. Beneficial results have been claimed in amanitin poisoning after ingestion of the mushroom *Amanita phalloides*, but such use is controversial (see under Poisonous Mushrooms or Toadstools, p.2349). Ethylenediamine thioctate, sodium thioctate, thioctic acid amide (thioctamide), and trometamol thioctate have been used similarly.

Diabetic neuropathy. References¹⁻⁵ to the benefits of thioctic acid in diabetic neuropathy.

1. Ziegler D, et al. Effects of treatment with the antioxidant α -lipoic acid on cardiac autonomic neuropathy in NIDDM patients: a 4-month randomized controlled multicenter trial (DEKAN study). *Diabetes Care* 1997; **20**: 369–73.
2. Ziegler D, et al. Treatment of symptomatic diabetic polyneuropathy with the antioxidant α -lipoic acid: a 7-month multicenter randomized controlled trial (ALADIN III study). *Diabetes Care* 1999; **22**: 1296–1301.
3. Ametov AS, et al. The sensory symptoms of diabetic polyneuropathy are improved with α -lipoic acid: the SYDNEY trial. *Diabetes Care* 2003; **26**: 770–6. Correction. *ibid.*; 2227.
4. Ziegler D, et al. Treatment of symptomatic diabetic polyneuropathy with the antioxidant α -lipoic acid: a meta-analysis. *Diabet Med* 2004; **21**: 114–21.
5. Ziegler D, et al. Oral treatment with α -lipoic acid improves symptomatic diabetic polyneuropathy: the SYDNEY 2 trial. *Diabetes Care* 2006; **29**: 2365–70.

Pharmacokinetics. References.

1. Teichert J, et al. Pharmacokinetics of alpha-lipoic acid in subjects with severe kidney damage and end-stage renal disease. *J Clin Pharmacol* 2005; **45**: 313–28.

Preparations

USP 31: Alpha Lipoic Acid Capsules; Alpha Lipoic Acid Tablets.

Proprietary Preparations (details are given in Part 3)

Arg.: Biletan; Ciagen; Neurotioc; Neutraco; Signus; Tiocetan; *Austria:* Thioctacid; Tiocetan; **Cz.:** Alpha-Lipon†; Thioctacid; Thiogamma; **Ger.:** Alpha-Lipo-gamma; Alpha-Lipon; alpha-Vibolex; Alphaflam; Azulipont†; Biomolipon; duralipon; espa-lipont†; Fenint†; Juthiac†; Neunium; Pleomix-Alpha†; Thioctacid; Thiogamma; Tromlipon; Verla-Lipon; Vitatrans; **Hung.:** Thioctacid; Thiogamma; **Indon.:** Alanox; Mecola Forte; **Ital.:** Tiobec Crema; **Jpn.:** Tiocant†; **Mex.:** Thioctacid; **Pol.:** Neurex; Thiogamma; **Rus.:** Berlithion (Берлитийон); Espa-Lipon (Эспа-липон); Thioctacid (Тиоктацид); Thiogamma (Тиогамма); **Thai.:** Lipoic†.

Multi-ingredient: **Arg.:** Biletan Enzimatico; Carbogasol Digestivo; Co-Ti-octan; Nervomax TBI 2; **Canad.:** Biotrim†; **Hong Kong:** Lipochole; **India:** Alcin-†; **Indon.:** Allicor; Aptivium Liver Support; Mecola; Reliv; **Ital.:** Alfa Lip; Angiovent; Byodionoral; Depatoc; Lipoacid Combi; Neuralfa; Neuroptic Osteolip; Tiobec; Tiofort; **Philipp.:** Illumina; **Port.:** Lipoacid; Lipoacid Combi†; **Spain:** Policiclosin†; **Thai.:** Lipochole.

Thiomucase

C-84-04; Chondroitinsulphatase; Tiomucasa.

Profile

Thiomucase is a mucopolysaccharidase with general properties similar to those of hyaluronidase, p.2321, but which also depolymerises chondroitin sulfate. It has been given to assist the diffusion of local anaesthetic injections.

Preparations

Proprietary Preparations (details are given in Part 3)

Spain: Thiocase.

Multi-ingredient: **Braz.:** Thiomucase.

Thiotriazoline

Tiotriazolin. Morpholine 5-methyl-1,2,4-triazoline-5-thioacetate.

Тиотриазолин

Profile

Thiotriazoline is reported to have anti-ischaemic, membrane stabilising, and antioxidant actions. It is used as a hepatoprotectant in various liver disorders and as a protectant in cardiovascular and cerebrovascular disorders. It is also used locally as an anti-inflammatory for wounds and lesions of the skin and mucous membranes and for vaginal or rectal inflammation.

Thiram (USAN, rINN)

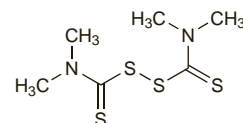
NSC-1771; SQ-1489; Thirame; Thiramum; Tiram; Tiramo; TMT; TMTD. Tetramethylthiuram disulphide.

Тирам

$C_6H_{12}N_2S_4 = 240.4$.

CAS — 137-26-8.

ATC — P03AA05.

**Profile**

Thiram, the methyl analogue of disulfiram (p.2296), has antibacterial and antifungal activity. It has been applied topically as an aerosol in the treatment of wounds and other skin disorders. It has been used as a fungicide in agriculture, and in industry as a rubber accelerator. Occupational exposure to thiram may cause irritation of mucous membranes and skin.

Thorium Dioxide

Thorium Oxide; Torio, dióxido de.

$ThO_2 = 264.0$.

CAS — 1314-20-1.

Profile

Colloidal solutions of thorium dioxide were formerly used as X-ray contrast media for examination of the liver and spleen, for arteriography, and occasionally for outlining the cerebral ventricles. Its elimination is very slow and incomplete. It accumulates in the reticuloendothelial system, especially in the liver and spleen. As it is radioactive (half-life: 1.41×10^{10} years), this accumulation is dangerous and there is strong evidence that the ensuing prolonged exposure to its radiation is a contributing factor in the development of malignant diseases and blood disorders of ten 20 to 30 years after its use.

Thuja

Tuya; White Cedar.

Profile

Thuja consists of the fresh leaves and twigs of *Thuja occidentalis* (Cupressaceae). It is included in some topical preparations for warts and in herbal antiseptic preparations. It is also used in herbal preparations for respiratory-tract disorders.

The oil distilled from the leaves and twigs is known as thuja oil or cedar leaf oil. It has been included in preparations for inhalation for the relief of respiratory-tract symptoms and for external use but is generally considered to be too toxic for internal use. Cedar leaf oil should be distinguished from cedar wood oil, obtained from *Juniperus virginiana* (see Red Cedar, p.2278).

Homoeopathy. Thuja has been used in homoeopathic medicines under the following names: Thuja occidentalis.

Preparations

Proprietary Preparations (details are given in Part 3)

Chile: Thujaederm.

Multi-ingredient: **Austral.:** Vicks Vaporub; **Austria:** Colda; Esberitox; Pe-Ce; **Belg.:** Aponi; Vicks Vaporub; **Braz.:** Calope†; Mentalol†; Vick Vaporub; **Fr.:** Item Alphacade; Item Alphazole; Item Lentes; Nitrol; Verrupar; Vicks Vaporub; **Ger.:** Esberitox N; **Malaysia:** Esberitox N; **Pol.:** Esberitox N; **Port.:** Alpha Cade; Alphacade; Alphazole†; **S.Afr.:** Vicks Vaporub; **Spain:** Nitroina; **Switz.:** Esberitop; Vicks Vaporub N; **Turk.:** Kataljin; Vicks Vaporub; **USA:** Vicks Vaporub.

Thymalfasin (USAN, rINN)

Thymalfasine; Thymalfasinum; Thymosin α 1; Timalfasina.

Тимальфазин

CAS — 62304-98-7; 69521-94-4.

Profile

Thymalfasin is a thymus hormone (p.2401) found in thymosin fraction 5 (a crude thymus gland extract) but now produced by synthesis. Thymalfasin is used alone or with interferon as an im-

munomodulator for the treatment of chronic hepatitis B, and with interferon for hepatitis C (p.851). It is given by subcutaneous injection in a dose of 1.6 mg twice weekly for up to 12 months. The dose in patients who weigh less than 40 kg is 40 micrograms/kg. Thymalfasin is also used to enhance the effectiveness of influenza vaccines in immunocompromised or elderly patients and of influenza and hepatitis B vaccines in chronic haemodialysis patients.

Thymalfasin is under investigation for a number of other diseases, including hepatitis D, hepatocellular carcinoma, non-small cell lung cancer, melanoma, and HIV infection and AIDS.

References.

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- Rasi G, *et al.* Combination thymosin α and lymphoblastoid interferon treatment in chronic hepatitis C. *Gut* 1996; **39**: 679–83.
- Zavaglia C, *et al.* A pilot study of thymosin- α 1 therapy for chronic hepatitis D. *J Clin Gastroenterol* 1996; **23**: 162–3.
- Andreone P, *et al.* A randomized controlled trial of thymosin- α versus interferon alfa treatment in patients with hepatitis B e antigen antibody- and hepatitis B virus DNA-positive chronic hepatitis B. *Hepatology* 1996; **24**: 774–7.
- Sherman KE, *et al.* Combination therapy with thymosin α 1 and interferon for the treatment of chronic hepatitis C infection: a randomized, placebo-controlled double-blind trial. *Hepatology* 1998; **27**: 1128–35.
- Chien R-N, *et al.* Efficacy of thymosin α 1 in patients with chronic hepatitis B: a randomized, controlled trial. *Hepatology* 1998; **27**: 1383–7.
- Rasi G, *et al.* Combined treatment with thymosin- α 1 and low dose interferon- α after dacarbazine in advanced melanoma. *Melanoma Res* 2000; **10**: 189–92.
- Ancell CD, *et al.* Thymosin alpha-1. *Am J Health-Syst Pharm* 2001; **58**: 879–85.
- Andreone P, *et al.* Thymosin-alpha 1 plus interferon-alpha for naive patients with chronic hepatitis C: results of a randomized controlled pilot trial. *J Viral Hepatitis* 2004; **11**: 69–73.
- Sjogren MH. Thymalfasin: an immune system enhancer for the treatment of liver disease. *J Gastroenterol Hepatol* 2004; **19**: S69–S72.
- Rustgi V. Combination therapy of thymalfasin (thymosin-alpha 1) and peginterferon alfa-2a in patients with chronic hepatitis C virus infection who are non-responders to standard treatment. *J Gastroenterol Hepatol* 2004; **19**: S76–S78.
- Iino S, *et al.* The efficacy and safety of thymosin alpha-1 in Japanese patients with chronic hepatitis B: results from a randomized clinical trial. *J Viral Hepatitis* 2005; **12**: 300–306.

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Zadaxin; **Hong Kong:** Zadaxin; **Indon.:** Zadaxin; **Ital.:** Zadaxin; **Malaysia:** Zadaxin; **Mex.:** Zadaxin; **Philipp.:** Zadaxin; **Singapore:** Zadaxin; **Thai.:** Zadaxin†.

Thyme

Common Thyme; French Thyme; Garden Thyme; Kakukkfű; Rubbed Thyme; Thym; Thymi herba; Thymian; Timjam; Timjan; Timo; Tomillo; Tymianová nat; Vaistinių čobrelių žolė; Ziele tymianku.

NOTE. Distinguish from Wild Thyme, p.2415.

Pharmacopoeias. In *Eur.* (see p.vii).

Ph. Eur. 6.2 (Thyme). The whole leaves and flowers separated from the previously dried stems of *Thymus vulgaris*, or *T. zygis*, or a mixture of both species. It contains not less than 12 mL/kg of essential oil, of which a minimum of 40% is thymol and carvacrol, both calculated with reference to the anhydrous drug. It has a strong aromatic odour reminiscent of thymol.

Profile

Thyme is the source of thyme oil (below). It has carminative, antiseptic, antitussive, and expectorant properties and is used chiefly in preparations for respiratory-tract disorders and as a flavour.

Preparations

Proprietary Preparations (details are given in Part 3)

Austria: Scottopect; **Chile:** Hustagil†; **Cz.:** Bronchicum Husten-Pastillen†; **Ger.:** Anastift; Aspector; Biotuss; Bronchicum Pastillen†; Bronchipret; Expectal N†; Fichtensirup N†; Gelobronchial; Hustagil Thymian-Hustensaft; Hustagil Thymiantropfen; Hustes†; Isephca S; Makatussin Saft†; Melrosium Hustensirup†; Menthymin mono†; Mirfussot†; Nimopect; Pertussin; Sanopin-wern; Soledum Hustensaft; Soledum Hustentropfen; Tesept; Erkaltungs; Thymipin N; Thymiverlan; Tussamag Hustenlösung; Tussamag Hustensaft N; Tussiflorin Thymian; **Israel:** Thymin Syrup; **Pol.:** Bronchicum N; Bronchicum T; **Rus.:** Bronchicum Husten (Бронхикум Пастилки от Кашля); Tussamag (Туссамэг); **Switz.:** Thymusin N.

Multi-ingredient: Arg.: Cellsinlab Phyto Spot; Expectosan Hierbas y Miel; **Austral.:** Broncafect; Bronchilin†; Cough Relief†; Euphorbia Complex; **Austria:** Bronchipret; Bronchithym; Bronchostop; Brust- und Hustentee St Severin; Codelum; Eicebaer; Expectal-Tropfen; Krauter Hustensaft; Luuf-Hustentee; Paracodin; Pilka; Pilka Forte; Pneumopan; Pneumopect; Scottopect; Thymoval; Tussamag; Tussissim†; **Belg.:** Colimax†; Thymoseptine; **Canad.:** Herbal Throat†; Original Herb Cough Drops; Swiss Herb Cough Drops; **Chile:** Phyto Corrective Gel; Phyto Spot; Primacy Phyto ++; Rhos Opodeldoo; **Cz.:** Biotussil; Bronchialtee N†; Bronchicum Elixir†; Bronchicum Hustensirup†; Bronchicum Sekret-Loser†; Bronchicum Tropfen†; Bronchipret; Bronchostop†; Erkaltungstee†; Nontussyl†; Perospir†; Pleumolysin; Pulmoran; Stomatosan†; Thymomel; Urcroston Planta; **Fin.:** Katapekt; **Fr.:** Depuratum; Germose†; Saugella; Tussidoron; **Ger.:** Bronchicum; Bronchicum Elixir N†; Bronchicum Elixir Plus†; Bronchicum Elixir S; Bronchicum Pflanzlicher†; Bronchicum Sekret-Loser†; Bronchicum Thymian†; Bronchicum Tropfen N†; Bronchipret; Bronchosox N†; Brust- und Hustentee; Cefadrin; Cito-Guakalin†; Dr Scheffler Bergischer Krautertee Husten- und Bronchialtee; Drosithym-N; Em-medical†; Epepect-Pastillen N; Equisil N; Eucabal†; Eupatal†; Expectysat N; Harzer Hustenloser†; Hevertopet N†;

Junisana†; Kinder Em-eukal Hustensaft†; Kneipp Husten- und Bronchial-Tee; Lomalt†; Makatussin Tropfen; Melissengeist; Muc-Sabona†; Original Schneckensirup†; Phytobronchil; Pulmocordio mite SL†; Pulmotin†; Sinuforton; Thymipin N†; Tussiflorin forte†; Tussiflorin Hustentier†; TUSSinfant N†; **Hong Kong:** Pectoralt†; **Hung.:** Bronchipret; **Indon.:** Bronchipret; Codipront cum Expectorant; Jesscol; Pectum; Silex; Thymical; **Israel:** Pilka; **Ital.:** Alteia (Specie Composta†); Broncoed; Broncosedina; Immumil Plus; Immumil†; Pinedrin†; Piodermina; Saugella Attiva; Saugella Fitothym†; Saugella Polign 7; Sebacoal†; Timo (Specie Composta†); Tussol; **Neth.:** Balsocase Compositum; Bronchicum; **Philipp.:** Bronchipret; **Pol.:** Aphi-Helix; Bobodent; Bronchicum Elikir; Bronchicum†; Bronchosol; Dentosept; Dentosept A; Echinasal; Enterosol; Hedelicum; Herbapect; Mucosol; Neoazarina; Pectobonisol; Pectosol; Pini-Helix; Salviasept; Saponarex; Tussispect; Tysal; **Port.:** Calmarum†; **Rus.:** Bronchicum (Бронхикум); Bronchicum Husten (Бронхикум Сироп от Кашля); Bronchipret (Бронхипрет); Bronchipret TP (Бронхипрет ТП); Codelac Phyto (Коделак Фито); Eucabal (Эвкabal); Maraslavin (Мараславин); Passifit (Пассифит); Stoptussin-Fito (Стоптуссин-Фито); **S.Afr.:** Bronchicough†; Bronchicum†; Cough Elixir; **Spain:** Natusor Asmaten†; Natusor Farinol†; Natusor Gripotul†; Natusor Infenol†; Natusor Renal†; Natusor Sinulan†; Pilka; Wobenzimal†; **Switz.:** Bronchofluid N†; Bronchosan Nouvelle formule†; Codipront cum Expectorant†; Demopectol; Dinacode N†; Expectoran Codein†; Expectoran†; Liberol Dragees contre la toux†; Liberol Pastilles contre la toux†; Liberol Sirop contre la toux†; Makaphyt Gouttes antitussives; Makaphyt Sirop; Neo-DPI†; Nican; Pectoral N; Pilka†; Strath Gouttes contre la toux†; Thymodrosin N†; Tisane pectorale et antitussive; Tisane pectorale pour les enfants; **Thai.:** Solvopret; Solvopret TP; **UK:** Herb and Honey Cough Elixir; **Venez.:** Codebromil; Mixagel†; T-Samag.

Thyme Oil

Esencia de Tomillo; Essência de Tomilho; Kakukkfűolaj; Kekik Yağı; Oil. Thym.; Olejek tymiankowy; Oleum Thymi; Thym, huile essentielle de; Thymi etheroleum; Thymi Etheroleum; Timjamölj; Timjanolja; Tomillo, aceite esencial de; Tymianová silice; Vaistinių čobrelių eterinis aliejus.

Pharmacopoeias. In *Eur.* (see p.vii).

Ph. Eur. 6.2 (Thyme Oil). The essential oil obtained by steam distillation from the fresh flowering aerial parts of *Thymus vulgaris*, *T. zygis*, or a mixture of both species. A clear, yellow or very dark reddish-brown, mobile liquid with a characteristic aromatic, spicy odour, reminiscent of thymol. Miscible with dehydrated alcohol and with petroleum spirit. It contains between 36 and 55% of thymol. Store in well-filled, airtight containers at a temperature not exceeding 25°. Protect from light.

Profile

Thyme oil is used similarly to thyme (above). It is also used in aromatherapy.

Preparations

Proprietary Preparations (details are given in Part 3)

Ger.: Bronchicum Medizinal-Bad†; Fichtensirup N†; Penaten; Thymian Erkaltungs-Bad.

Multi-ingredient: Arg.: Cuassicum; **Austral.:** Efalex†; Tixylx Chest Rub†; Zam-Buk†; **Austria:** Bronchostop; Expectal-Balsam; Heumann's Bronchialtee; Luuf-Hustentee; Scottopect; **Belg.:** Perubore; **Canad.:** Efalex†; **Chile:** Hustagil†; **Cz.:** Tussilen; **Fr.:** Acarid†; Balsofumine; Balsofumine Menthol; Biogaze†; Gouttes aux Essences; Nazinette du Docteur Gilbert; Perubore; **Ger.:** Antitussivum Burger N†; Aspecton-Balsam†; Em-eukal†; Heumann Bronchialtee Solubifix T; Hustagil Erkaltungsbalsam†; Medizinisches Erkaltungs Bad; Melrosium Medizinalbad†; Nasulind; Pulmotin; Retterspitz Innerlich; Tesept Badekonzentrat Erkaltungs Bad N†; Tesept Bademeditz Erkaltungs Intensiv Bad N†; **Gr.:** Snuffelbabe†; **Ital.:** Altuss; Calyptol; Esoklin; Fomentil; Valda Timo e Limone; Vegetaliumina; **NZ:** Efalex; Tixylx Chest Rub; **Pol.:** Argol Essenza Balsamica; Argol Grip; Argol Rheuma; Carmolis; Inhalol; Salviasept; **Port.:** Erpecalm; Vaporil; **Rus.:** Carmolis (Кармолис); Carmolis Fluid (Кармолис Жидкость)†; **S.Afr.:** Balsem Vita GEEL; Balsem Vita ROOL; Balsem Vita VIT; Oleum Rhinale Nasal Oil; Zam-Buk†; **Spain:** H Tussan; Temosan; **Switz.:** Carmol; Carmol Plus†; Demo pommade contre les refroidissements†; Demonatur Capsules contre les refroidissements; Dolo-Arthrosenex sine Heparino†; Eucapinol; Frigoplasma†; Friso-Dragon Vert†; Liberol Bain†; Liberol N; Makaphyt Baume†; Nasobol N; Perubare†; Pinimenthol Baby†; Pulmex; Sedasept†; Spagyrom; Volo Bain antirefroidissement; **Thai.:** St Luke's Oil; **Turk.:** Algo-Wax; Mentoseptol; **UK:** Efalex; Nine Rubbing Oils; Snowfire; Snuffelbabe; **USA:** Maximum Strength Flexall 454; Unguentine.

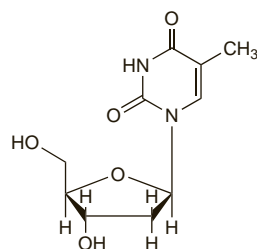
Thymidine

NSC-21548; Thymine 2-Desoxyriboside; Timidina; Tymidyna. 1-(2-Deoxy- β -D-ribofuranosyl)-5-methyluracil; 1-(2-Deoxy- β -D-ribofuranosyl)-1,2,3,4-tetrahydro-5-methylpyrimidine-2,4-dione.

ТИМИДИН

$C_{10}H_{14}N_2O_5 = 242.2$.

CAS — 50-89-5.



Profile

Thymidine is an endogenous thymine nucleoside involved in many biological processes; it is one of the components of nucleic acids (p.2355). It was formerly given by intravenous infusion to modulate the toxicity of methotrexate but is not considered to be a substitute for calcium folinate; it may also have an antineoplastic action of its own.

Thymidine is given typically with other nucleosides in preparations for the treatment of corneal damage.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: Belg.: Vitacic; **Hung.:** Vitacic†; **Mon.:** Vitacic; **Rus.:** Vitacic (Витасик)†.

Thymus Hormones

Timo, hormonas del.

CAS — 69558-55-0 (thymopentin); 60529-76-2 (thymopoietin); 63340-72-7 (thymic humoral factor).

Profile

The thymus gland controls the development of T-lymphocytes and thereby plays a central role in cell-mediated immunity and the regulation of immune responses. Several polypeptides characterised in the thymus or serum are able to induce lymphocyte differentiation *in vitro* and *in vivo*. They include: thymosin fraction 5, a crude thymus gland extract; thymalfasin (p.2400); thymosin beta 4; thymic humoral factor (THF), isolated from crude thymic extract dialysate; nonathymulin (thymulin, serum thymic factor, Facteur Thymique Serique, FTS), a synthetic nonapeptide; thymomodulin, a partially purified extract from calf thymus; thymogene A, extracted from calf thymus; thymopoietin, a polypeptide of known amino acid sequence; thymopentin (thymopoietin pentapeptide, TP-5), a fragment of thymopoietin with 5 amino acids; and thymostimulin (TP-1), extracted from calf thymus.

Various preparations, including crude extracts from calf thymus gland, thymomodulin, thymopentin, and thymostimulin have been tried as immunomodulators in numerous conditions including rheumatoid arthritis, diabetes mellitus, immunodeficiency disorders, skin disorders, malignant neoplasms, and some infections.

References.

- Huff T, *et al.* β -Thymosins, small acidic peptides with multiple functions. *Int J Biochem Cell Biol* 2001; **33**: 205–20.
- Hannappel E, Huff T. The thymosins—prothymosin alpha, parathymosin, and beta-thymosins: structure and function. *Vitam Horm* 2003; **66**: 257–96.
- Goldstein AL, Badamchian M. Thymosins: chemistry and biological properties in health and disease. *Expert Opin Biol Ther* 2004; **4**: 559–73.
- Chen C, *et al.* Roles of thymosins in cancers and other organ systems. *World J Surg* 2005; **29**: 264–70.

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Leucotrofina; **Austral.:** Thymunes; **Braz.:** Leucogen; **Cz.:** TP-1†; **Ger.:** Thym-Uvocal; Thymo-Glandurettin†; Thymoject; Thymophysin; Thymowied†; **Ital.:** Sintomodulina.

Multi-ingredient: Austria: Wobe-Mugos; **Cz.:** Wobe-Mugos†.

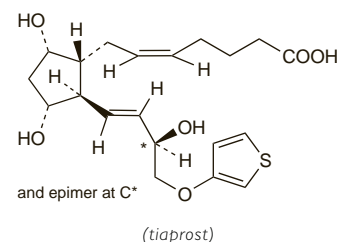
Tiaprost Trometamol (BANM, rINNM)

Tiaprost Trometamol; Tiaprostom Trometamol. Trometamol salt of (±)-(Z)-7-[(1R,2R,3R,5S)-3,5-dihydroxy-2-[(E)-(3R)-3-hydroxy-4-(3-thienyloxy)but-1-enyl]cyclopentyl]hept-5-enoic acid.

Тиапрост Трометамол

$C_{20}H_{28}O_6, C_4H_{11}NO_3 = 517.6$.

CAS — 71116-82-0 (tiaprost).



Profile

Tiaprost trometamol is a synthetic analogue of dinoprost (prostaglandin F₂). It is used as a luteolytic in veterinary medicine.

The symbol † denotes a preparation no longer actively marketed

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