genin; Spasmo-Urgenin; Urgenin; **Switz.:** Demonatur Capsules contre les refroidissements; Demonatur Dragees pour les reins et la vessie; Drosana Resiston avec vitamine C; Esberitop; Gel a la consoude; Kytta Gel†; Parodontax F†; Parodontax†; Phytomed Prosta†; Prosta-Caps Chassot N; Spagymun; Spagyrom; Wala Echinacea; Wecesin†; **Thai.:** Spasmo-Urgenin; **UK:** Antifect; Echinacea; Goodypops; Hay Fever & Sinus Relief; Hayfever & Sinus Relief; Modern Herbals Cold & Catarrh; Revitonil; Sinotar.

Eculizumab *(USAN, rINN)*

Éculizumab; Eculizumabum; h5G1.1. Immunoglobulin, anti-(human complement C5 α-chain) (human-mouse monoclonal 5G1.1 heavy chain), disulfide with human-mouse monoclonal 5G1.1 light chain, dimer.

Экулизумаб

CAS — 219685-50-4.
ATC — L04AA25.
ATC Vet — QL04AA25.

Profile

Eculizumab is a recombinant humanised monoclonal antibody that acts as a complement blocker (p.2286) by inhibiting terminal complement activation at the C5 protein. It is used to reduce haemolysis in patients with paroxysmal nocturnal haemoglobinuria, a severe and disabling form of haemolytic anaemia (p.1043). Eculizumab is given by intravenous infusion over 25 to 45 minutes in a dose of 600 mg every 7 days for the first 4 weeks, followed by 900 mg 7 days later, and then 900 mg every 14 days thereafter. The infusion should be diluted to 5 mg/mL in sodium chloride 0.45% or 0.9%, glucose 5%, or Ringer's injection. The infusion rate may be decreased in the event of infusion reactions but the total infusion time should not exceed 2 hours; the infusion may be stopped in severe reactions. Patients should be monitored for at least one hour after the infusion for signs of infusion reactions. Patients who stop treatment altogether are at increased risk for serious haemolysis and should be monitored for 8 weeks.

Use of eculizumab increases susceptibility to meningococcal infections and patients who are not up to date with their meningococcal vaccinations should be vaccinated at least 2 weeks before receiving the first dose of eculizumab and receive booster vaccinations according to current guidelines. Patients should be monitored during treatment for early signs of meningococcal infections and treated as required. Susceptibility to other infections may also increase and eculizumab should be used with caution in patients with systemic infection. Other adverse effects that have been reported with eculizumab include headache, nasopharyngitis, back pain, and nausea.

◊ References.

1. Hillmen P, *et al.* The complement inhibitor eculizumab in paroxysmal nocturnal hemoglobinuria. *N Engl J Med* 2006; **355:** 1233–43.
2. Hillmen P, *et al.* Effect of the complement inhibitor eculizumab on thromboembolism in patients with paroxysmal nocturnal hemoglobinuria. *Blood* 2007; **110:** 4123–8.
3. Schubert J, *et al.* Eculizumab, a terminal complement inhibitor, improves anaemia in patients with paroxysmal nocturnal haemoglobinuria. *Br J Haematol* 2008; **142:** 263–72.
4. Charneski L, Patel PN. Eculizumab in paroxysmal nocturnal haemoglobinuria. *Drugs* 2008; **68:** 1341–6.

Preparations

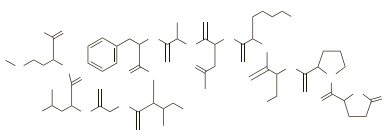
Proprietary Preparations (details are given in Part 3)
Cz.: Soliris; ***Fr.:*** Soliris; ***Port.:*** Soliris; ***UK:*** Soliris; ***USA:*** Soliris.

Eledoisin *(rINN)*

ELD-950; Eledoisina; Élédoïsine; Eledoisinum. 5-Oxo-Pro-Pro-Ser-Lys-Asp-Ala-Phe-Ile-Gly-Leu-Met-NH_2.

Эледоизин

$C_{54}H_{85}N_{13}O_{15}S$ = 1188.4.
CAS — 69-25-0 (eledoisin); 10129-92-7 (eledoisin trifluoroacetate).



Profile

Eledoisin is a peptide extracted from the posterior salivary glands of certain small octopuses (*Eledone* spp., Mollusca), or obtained by synthesis. Its actions resemble those of substance P; it is a potent vasodilator and increases capillary permeability. It has been given as the trifluoroacetate in eye drops to stimulate lachrymal secretion in Sjögren's syndrome and other dry eye conditions.

Preparations

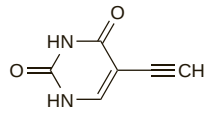
Proprietary Preparations (details are given in Part 3)
Spain: Eloisin.

Eniluracil *(BAN, USAN, rINN)*

776C85; Eniluracilo; Eniluracilum. 5-Ethynyluracil.

Энилурацил

$C_6H_4N_2O_2$ = 136.1.
CAS — 59989-18-3.



Profile

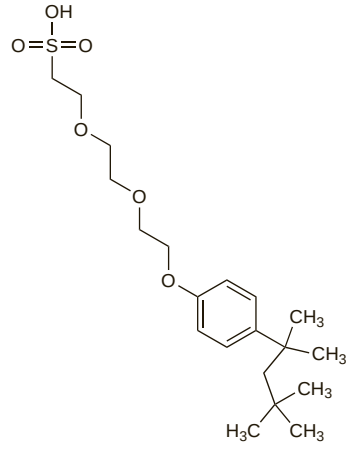
Eniluracil inactivates the enzyme dihydropyrimidine dehydrogenase, which plays an important role in the metabolism of the antineoplastic fluorouracil (p.723). Eniluracil increases the bioavailability of fluorouracil, particularly when the latter is given by mouth. It is being investigated as an adjunct to fluorouracil therapy in the treatment of colorectal, breast, and pancreatic cancer. However, the optimal dose and regimen remains to be determined.

Entsufon Sodium *(USAN, rINNM)*

Entsufón sódico; Entsufon Sodique; Natrii Entsufonum. Sodium 2-{2-[2-(*p*-1,3,3-tetramethylbutylphenoxy)ethoxy]ethoxy}ethanesulfonate.

Натрий Энтсуфон

$C_{20}H_{33}NaO_6S$ = 424.5.
CAS — 55837-16-6 (entsufon); 2917-94-4 (entsufon sodium).



(entsufon)

Profile

Entsufon sodium is a detergent used as a soap substitute for cleansing the skin.

Preparations

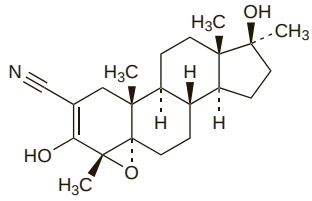
Proprietary Preparations (details are given in Part 3)
Multi-ingredient: ***Canad.:*** pHisoHex; ***USA:*** pHisoHex.

Epostane *(BAN, USAN, rINN)*

Épostane; Epostano; Epostanum; Win-32729. 4α,5α-Epoxy-3,17β-dihydroxy-4β,17α-dimethyl-5α-androst-2-ene-2-carbonitrile.

Эпостан

$C_{22}H_{31}NO_3$ = 357.5.
CAS — 80471-63-2.



Profile

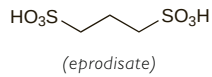
Epostane has antiprogestogenic activity and has been investigated for use with prostaglandins in the termination of pregnancy, and as a uterine stimulant for the induction of labour.

Eprodisate Disodium *(USAN, rINNM)*

Éprodisate Disodique; Eprodisato disódico; Eprodisatum Dinatricum; NC-503. Disodium propane-1,3-disulfonate.

Динатрий Эпродисат

$C_3H_6Na_2O_6S_2$ = 248.2.
CAS — 36589-58-9.



(eprodisate)

Profile

Eprodisate disodium is a glycosaminoglycan mimetic under investigation for the prevention of amyloid fibril formation and deposition in the treatment of AA amyloidosis.

◊ References.

1. Dember LM, *et al.* Eprodisate for the treatment of renal disease in AA amyloidosis. *N Engl J Med* 2007; **356:** 2349–60.

Equisetum

Åkerfräken; Asiūklių žolė; Cola de Caballo; Equiseti herba; Equiseto; Herba Equiseti; Horsetail; Peltokorte; Prêle; Prêle, tige de; Přesličková nať; Schachtelhalmkraut; Ziele skrzypu.

Pharmacopoeias. In *Eur.* (see p.vii).
Ph. Eur. 6.2 (Equisetum Stem; Horsetail BP 2008). The whole or cut, dried sterile aerial parts of *Equisetum arvense*. It contains a minimum of 0.3% of total flavonoids expressed as isoquercitroside ($C_{21}H_{20}O_{12}$ = 464.4), calculated with reference to the dried drug.

Profile

Equisetum is an ingredient of herbal preparations that have been used in the treatment of genito-urinary and respiratory disorders. Similar preparations have been used in the treatment of cardiovascular disorders, rheumatic disorders, liver disorders, constipation, and as a tonic.

The related species *Equisetum hiemale* is used in China for the treatment of eye disorders.

Homoeopathy. Equisetum has been used in homoeopathic medicines under the following names: Equisetum arvense.

Preparations

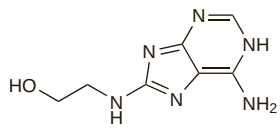
Proprietary Preparations (details are given in Part 3)
Austral.: Bioglan Silica-Vite; ***Cz.:*** Nat Preslicky†; Preslicka; Preslickova; ***Fr.:*** Siliprele; ***Ger.:*** Lomaren; Nieron E; Prodiuret†; Pulvhydrops Mono†; Redaxa fit; Zinnkraut-Tropfen†; ***Ital.:*** Bioequiseto; Osteosil†.

Multi-ingredient: ***Arg.:*** Arceligasol; Centella Queen Complex; Centellase Gel; Silueta Plus; ***Austral.:*** Cal Alkyline; Extralife Fluid-Care; Medinat Esten†; Serenoa Complex†; Silicic Complex†; ***Austria:*** Blasentee St Severin; Entschlackender Abfuhrtee EF-EM-ES; Nierentee St Severin; Pneumopan; St Bonifatius-Tee; Uropurat; ***Chile:*** Nature Complex Reduct-Te; Reduc-Te; ***Cz.:*** Alvisan Neo; Antirevmaticky Caj; Blasen- und Nierentee†; Nephrosal†; Senalax; Species Diureticae Planta†; Stoffwechseltee N†; Urcyston Planta; ***Fr.:*** Arterase; Obeflorine; ***Ger.:*** Equisil N; Eviprostat N; Harntee STADA; Hevert-Blasen-Nieren-Tee N; nephro-loges; Nephroselect M; Nieron-Tee N†; Presselin Nieren-Blasen K 3†; Presselin Stoffwechsel-Tee Hapeka 225 N†; Solidagoren N; Solum Ol; Tonsilgon; ***Indon.:*** Eviprostat; ***Ital.:*** Osteosil Calcium; Pik Gel; ***Jpn:*** Eviprostat; ***Pol.:*** Betasol; Cholesol; Nefrobonisol; NeoFitolizyna; Reumosol; Sanofil; ***Rus.:*** Herbion Urological Drops (Гербион Урологические Капли); Tonsilgon N (Тонзилгон Н); ***Singapore:*** Eviprostat; ***Spain:*** Diurette; Diurinat; Natusor Artilane†; Natusor Harpagosinol†; Natusor Infenol†; Natusor Renal†; Resolutivo Regium; ***Switz.:*** Nephrosolid; Tisane Diuretique; Urinex; ***UK:*** Antiglan; Antitis; Aqualette; Kas-Bah; ***Venez.:*** Demerung; Rheu-Tarx 1.

Etaden

Ethaden. 2-[(6-Amino-1*H*-purin-8-yl)amino]ethanol.

$C_7H_{10}N_6O$ = 194.2.
CAS — 66813-29-4.



Profile

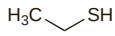
Etaden is used in the form of eye drops to stimulate epithelial regrowth.

Ethanethiol

Ethyl Mercaptan Thioethyl Alcohol; Ethylmercaptan; I-Ethanethiol.

Этантиол; Этил Меркаптан

C_2H_6S = 62.13.
CAS — 75-08-1.



Profile

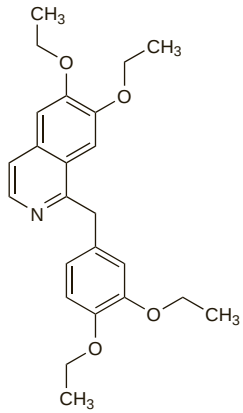
Mercaptans such as ethanethiol have an extremely disagreeable odour that is detectable by humans at very low concentrations and therefore they are added as a safety measure to odourless gases such as natural gas. Inhalation of high concentrations of ethanethiol can cause dizziness, headache, nausea, vomiting, and unconsciousness.

Ethaverine Hydrochloride *(rINNM)*

Éthavérine, Chlorhydrate d'; Ethaverini Hydrochloridum; Hidrocloruro de etaverina. 6,7-Diethoxy-1-(3,4-diethoxybenzyl)isoquinoline hydrochloride.

Этаверина Гидрохлорид

$C_{24}H_{29}NO_4$,HCl = 432.0.
CAS — 486-47-5 (ethaverine); 985-13-7 (ethaverine hydrochloride).



(ethaverine)

Profile

Ethaverine is the tetraethoxy analogue of papaverine (p.2191) and has been used as the hydrochloride as an antispasmodic in respiratory-tract, biliary, gastrointestinal, and genito-urinary disorders. It has also been used in migraine, vascular disorders and as an antiarrhythmic.

Ethaverine sulfamate has also been used.

Preparations

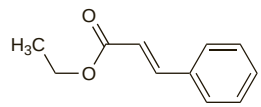
Proprietary Preparations (details are given in Part 3)

Multi-ingredient: ***Austria:*** Asthma Efeum; Gastripan; Oddispasmol; ***Braz.:*** Euferm†; ***Thai.:*** Elzym†.

Ethyl Cinnamate

Cinamato de etilo. Ethyl (*E*)-3-phenylprop-2-enoate.

$C_{11}H_{12}O_2$ = 176.2.
CAS — 103-36-6.



Pharmacopoeias. In *Br.*

BP 2008 (Ethyl Cinnamate). A clear, colourless or almost colourless liquid with a fruity, balsamic odour. Practically insoluble in water; miscible with most organic solvents.

Profile

Ethyl cinnamate is used as a flavour and perfume; it is an ingredient of Tolu-flavour Solution (BP 2008).

Preparations

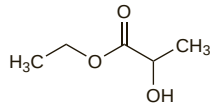
BP 2008: Tolu-flavour Solution.

Ethyl Lactate

Etilo, lactato de.

Этилактат

$C_5H_{10}O_3$ = 118.1.
CAS — 97-64-3.



Profile

Ethyl lactate has been applied topically in the treatment of acne vulgaris. It is reported to lower the pH within the skin thereby exerting a bactericidal effect.

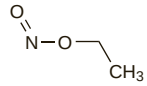
Ethyl lactate is also used in the flavouring of foods.

Ethyl Nitrite

Nitrous Acid Ethyl Ester; Nitrous Ether.

Этилнитрит

$C_2H_5NO_2$ = 75.07.
CAS — 109-95-5.



NOTE. Do not confuse with *O*-nitrosoethanol, a substance that has been referred to in the literature as 'ethyl nitrite gas'.

Profile

Ethyl nitrite has vasodilator effects similar to other volatile nitrites (see Amyl Nitrite, p.1437). Alcoholic solutions of ethyl nitrite (Ethyl Nitrite Spirit; Nitrous Ether Spirit; Sweet Nitre Spirit; Sp. Aether. Nitros.) have been used as a diaphoretic in the treatment of colds and fevers.

◊ Methaemoglobinaemia occurred in 2 infants given a folk remedy containing ethyl nitrite. Despite treatment with methylthionium chloride 1 infant died.[1]

1. Chilcote RR, *et al.* Sudden death in an infant from methemoglobinemia after administration of "sweet spirits of nitre". *Pediatrics* 1977; **59:** 280–2.

Preparations

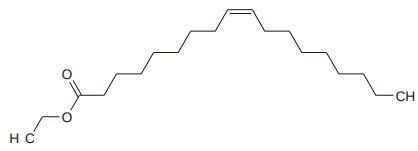
Proprietary Preparations (details are given in Part 3)

S.Afr.: Witdulsies.

Ethyl Oleate

Aethylis Oleas; Éthyle, oléate d'; Ethylis oleas; Ethyl-oleát; Etil-oleát; Etiloleatas; Etyloleat; Etyylioleaatti; Oleato de etilo.

$C_{20}H_{38}O_2$ = 310.5.
CAS — 111-62-6.



Pharmacopoeias. In *Eur.* (see p.vii). Also in *USNF.*

Ph. Eur. 6.2 (Ethyl Oleate). A clear, pale yellow or colourless liquid. It consists of the ethyl esters of fatty acids, mainly oleic acid. It may contain a suitable antioxidant. Practically insoluble in water; miscible with alcohol, with dichloromethane, and with petroleum spirit (40° to 60°). Protect from light.

USNF 26 (Ethyl Oleate). It consists of esters of ethyl alcohol and high-molecular-weight fatty acids, principally oleic acid. A mobile, practically colourless liquid. Insoluble in water; miscible with alcohol, with vegetable oils, with liquid paraffin, and with most organic solvents. Store in airtight containers. Protect from light.

Incompatibility. Ethyl oleate dissolves some types of rubber and causes others to swell.

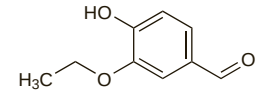
Profile

Ethyl oleate is used as an oily vehicle.

Ethyl Vanillin

Etilvanilina. 3-Ethoxy-4-hydroxybenzaldehyde.

$C_9H_{10}O_3$ = 166.2.
CAS — 121-32-4.



Pharmacopoeias. In *USNF.*

USNF 26 (Ethyl Vanillin). Fine, white or slightly yellowish crystals with a vanilla-like odour. M.p. is between 76° and 78°. Soluble 1 in 100 of water at 50° and 1 in 2 of alcohol; freely soluble in chloroform, in ether, and in solutions of alkali hydroxides. Its solutions are acid to litmus. Store in airtight containers. Protect from light.

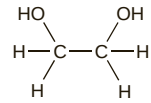
Profile

Ethyl vanillin is used as a flavour and in perfumery to impart the odour and taste of vanilla.

Ethylene Glycol

Ethylene Alcohol; Etilen Glikol; Etilenglicol; Glikol etylenowy; Glycol. Ethane-1,2-diol.

$C_2H_6O_2$ = 62.07.
CAS — 107-21-1.



Adverse Effects

Toxic effects arising from ingestion of ethylene glycol result from its major metabolites: aldehydes, glycolate, lactate, and oxalate. Clinical features may be divided into three stages depending on the time elapsed since ingestion. In the first 12 hours, the patient may show signs of drunkenness and experience nausea and vomiting. Convulsions and neurological defects may occur. From 12 to 24 hours, there may be tachycardia, mild hypertension, pulmonary oedema, and heart failure. Between 24 and 72 hours, patients with severe ethylene glycol poisoning may experience flank pain and renal involvement with associated decreased plasma concentrations of calcium and bicarbonate, metabolic acidosis, deposition of oxalate in tissues and kidney tubules, proteinuria, oxaluria, haematuria, and renal failure. There may be respiratory failure, cardiovascular collapse, and sometimes coma and death. The fatal dose is reported to be about 100 mL.

Skin irritation and penetration have been reported after topical application.

Diethylene glycol produces similar toxicity, except that there is no conversion to oxalate and there is greater nephrotoxicity. Poisoning has followed adulteration of medicinal products with diethylene glycol.

◊ References.

1. Anonymous. Some wine to break the ice. *Lancet* 1985; **ii:** 254.
2. Vale JA, Buckley BM. Metabolic acidosis in diethylene glycol poisoning. *Lancet* 1985; **ii:** 394.
3. Buckley BM, Vale JA. Poisoning by alcohols and ethylene glycol. *Prescribers' J* 1986; **26:** 110–15.
4. Hanif M, *et al.* Fatal renal failure caused by diethylene glycol in paracetamol elixir: the Bangladesh epidemic. *BMJ* 1995; **311:** 88–91.
5. Lewis LD, *et al.* Delayed sequelae after acute overdoses or poisonings: cranial neuropathy related to ethylene glycol ingestion. *Clin Pharmacol Ther* 1997; **61:** 692–9.
6. O'Brien KL, *et al.* Epidemic of pediatric deaths from acute renal failure caused by diethylene glycol poisoning. *JAMA* 1998; **279:** 1175–80.
7. Singh J, *et al.* Diethylene glycol poisoning in Gurgaon, India, 1998. *Bull WHO* 2001; **79:** 88–95.
8. Hasbani MJ, *et al.* Encephalopathy and peripheral neuropathy following diethylene glycol ingestion. *Neurology* 2005; **64:** 1273–5.

Treatment of Adverse Effects

The stomach should be emptied by lavage if ingestion of ethylene glycol was within the preceding hour. Severe metabolic acidosis should be corrected. Hypocalcaemia may require correction with calcium gluconate in severe cases, although this is not usually done routinely because it may increase the formation of calcium oxalate crystals. Haemodialysis may be of value. Alcohol may be given by mouth or intravenously as it is a competitor of the metabolism of ethylene glycol. Alternatively fomepizole (p.1446), an alcohol-dehydrogenase inhibitor, may be used for the treatment of ethylene glycol poisoning.

◊ References.

1. Harry P, *et al.* Ethylene glycol poisoning in a child treated with 4-methylpyrazole. *Pediatrics* 1998; **102:** E31.