

The application to the skin of liniments containing turpentine oil may cause irritation and absorption of large amounts may cause some of the effects listed above. Hypersensitivity reactions and local irritation have been reported.

## Uses and Administration

Turpentine oil is widely used as a solvent. It is applied topically as a rubefacient. It is an ingredient of many preparations used in respiratory-tract disorders, but is now judged to be neither safe nor effective.

## Preparations

**BP 2008:** White Liniment.

**Proprietary Preparations** (details are given in Part 3)

**Fr.:** Ozothine; **Ger.:** Caprisana†; **Port.:** Vicks Vaporub.

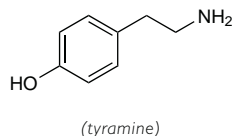
**Multi-ingredient:** **Arg.:** Atomo Desinflamante C; Bronco Etersan; Fluido; Notoxin; Otolcalmia; Rati Sali Crema; **Austral.:** Goanna Heat Cream; Goanna Salve; Vicks Vaporub; **Austria:** Acimont; Baby Luuf; Bronchostop; Carl Baders Divinal; Emser Nasensalbe; Ilon Abszess; Kinder Luuf; Leukona-Rheuma-Bad; Luuf Balsam; Pe-Ce; Piniment; Rubriment; Salhumini; Scottopet; Trauma-Salbe wärmend; Tussamag; Vulpuran; Vicks Vaporub; **Belg.:** Algis-Spray; Reflexspray; Vicks Vaporub; **Braz.:** A. Curitybina; Aliviol; Analgen†; Angino-Rub; Beneget; Frixopex; Gelflex; Gelforix; Gelofix; Gelonevral†; Massageoil; Mentaloil†; Mialgex†; Nevrol; Oleo Elettrico†; Salimetin†; Trauma; Traumagel; Vick Vaporub; **Canad.:** Cal Mo Dol; Cerumol; **Chile:** Balsamo León†; Calorub Nueva Formula; Hansaplast Descongestionante; Mentobalsam; **Cz.:** Ilon Abszess; Viprosal B†; **Fin.:** Vicks Vaporub; **Fr.:** Dinacodet†; Lumbalgine; Ozothine; Ozothine a la Diprophylline; Vicks Vaporub; **Ger.:** Em-eukal†; Emser Nasensalbe N†; Erkaltungsbalsam-ratiopharm E Salbe†; Hevertopet†; Hevertopet N†; Ilon Abszess; Leukona-Rheuma-Bad N†; Leukona-Rheumasalbe†; Ozothin†; tactu-mobil; Tetesept Badekonzentrat; Erkaltungs Bad N†; Trauma-Salbe Rodler 302 N†; Wick Vaporub; **Gr.:** Deep Heat; Faragel-Forle; **India:** Clearwax Flexi-muv; Wax-olive; **Indon.:** Opino; Sloan's Liniment; **Israel:** Deep Heat Rub; Ment-O-Cap; **Ital.:** Capsolin; Vicks Vaporub; **Malaysia:** Thermonub; **Neth.:** Luuf Verkoudheidsbalsem; Luuf Verkoudheidsbalsem (voor babies); Luuf Verkoudheidsbalsem (voor Kinderen); Vicks Vaporub; **NZ:** Vicks Vaporub; **Pol.:** Analgol; Analgolani; Capsigel N; Deep Heat†; Derhotil†; Dip Hot; Herbolon; Inhalol; Neo-Capsiderm; Pulmonit; Reumatik; Rub-Arom; Wick Vaporub; **Port.:** Balsamo Analgesico Basi; Balsamo Analgesico Labesal†; Calicida Indiano; Freimax†; Lauromentol†; **Rus.:** Capsicam (Капсикам); Carmolis Fluid (Кармолис Жидкость)†; Doktor Mom (Доктор Мом); Olimetin (Олиметин)†; Suprima-Plus (Суприма-Плюс); Viprosal B (Випросал В); **S.Afr.:** Balsem Sulphuris; Deep Heat Rub; Haarlemensis; Puma Balm; Respinisners; Sloan's Liniment Rub; Vicks Vaporub; Woodwards Inhalant; **Spain:** Dologex†; Embrocacion Gras; Linimento Klar†; Masagil; Otocerum; Reflex; Termosan; **Swed.:** Vicks Vaporub†; **Switz.:** Alginex†; Baume du Chalet; Carmol; Cerumenol; Eucapinol; Frixo-Dragon Vert†; Knobel Huile N; Makaphyt Baume†; Massorax†; Pinimenthol†; PO-HO bleu; Pommade au Baume; Vicks Vaporub N; **Thai.:** Stopain; Tiffyrub†; **Turk.:** Algo-Wax; Bugumentol; Buguseptil; Capsalgine; Gelocaps; Kataljin; Vicks Vaporub; **UK:** Deep Heat Rub; Dragon Balm; Ellumans; Goddards Embrocation; Gonnie Balm; Modern Herbs Muscular Pain; Nasciodine; Nine Rubbing Oils; Vicks Vaporub; Waxwanet; **USA:** Vicks Vaporub; **Venez.:** Friction Aromatica.

## Tyramine Hydrochloride ☒

Tiramina, hidroclocloro de; *p*-Tyramine Hydrochloride; Tyrosamine Hydrochloride. 4-Hydroxyphenethylamine hydrochloride; 4-(2-Aminoethyl)phenol hydrochloride.

$C_8H_{11}NO \cdot HCl = 173.6$ .

**CAS** — 51-67-2 (tyramine); 60-19-5 (tyramine hydrochloride).



## Profile

Tyramine hydrochloride is a sympathomimetic with indirect effects on adrenergic receptors. It has been given orally or by injection in the tyramine pressor test for the investigation of monoamine oxidase inhibitory activity or amine uptake blocking activity. It has also been used in studies of physiological and disease states, and in the diagnosis of migraine and pheochromocytoma.

The hazards of taking foods rich in tyramine while under treatment with MAOIs are described in the chapter on Antidepressants (see Phenelzine, p.417).

☊ The bioavailability of tyramine given by mouth is significantly reduced by the presence of food, which could have implications when used in tyramine pressor tests.<sup>1</sup>

1. VanDenBerg CM, *et al.* Tyramine pharmacokinetics and reduced bioavailability with food. *J Clin Pharmacol* 2003; **43**: 604-9.

## Preparations

**Proprietary Preparations** (details are given in Part 3)

**Multi-ingredient:** **Ger.:** Mydrial-Atropin†.

## Ubidecarenone (BAN, rINN)

Coenzyme Q10; Ubidecarenona; Ubidecarénone; Ubidecarenonum; Ubidekarenon; Ubidekarenonas; Ubidekarenol; Ubiquinone-10; 2-Deca(3-methylbut-2-enylene)-5,6-dimethoxy-3-methyl-*p*-benzoquinone.

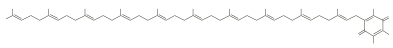
Убидекарэнон

$C_{59}H_{90}O_4 = 863.3$ .

**CAS** — 303-98-0.

**ATC** — C01EB09.

**ATC Vet** — QC01EB09.



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

**Ph. Eur. 6.2** (Ubidecarenone). A yellow or orange crystalline powder. It gradually decomposes and darkens on exposure to light. M.p. about 48°. Practically insoluble in water; very slightly soluble in dehydrated alcohol; soluble in acetone. Store in airtight containers. Protect from light.

**USP 31** (Ubidecarenone). A yellow to orange, crystalline powder. M.p. about 48°. Practically insoluble in water; very slightly soluble in dehydrated alcohol; soluble in ether. Protect from light.

## Profile

Ubidecarenone is a naturally occurring coenzyme involved in electron transport in the mitochondria. It is claimed to be a free radical scavenger and to have antioxidant and membrane stabilising properties. It has been given by mouth as an adjunct in cardiovascular disorders, including mild or moderate heart failure. It has also been tried in other conditions associated with coenzyme deficiency, and is promoted as a dietary supplement. Ubidecarenone is under investigation for the management of cancer, Huntington's chorea (p.953) and parkinsonism.

☊ For discussion of the use of ubidecarenone in statin-induced muscle disorders, see Effects on Skeletal Muscle, under Simvastatin, p.1391.

☊ References.

1. Greenberg S, Frishman WH. Co-enzyme Q : a new drug for cardiovascular disease. *J Clin Pharmacol* 1990; **30**: 596-608.
2. Spigset O. Reduced effect of warfarin caused by ubidecarenone. *Lancet* 1994; **344**: 1372-3.
3. Garcia Silva MT, *et al.* Improvement of refractory sideroblastic anaemia with ubidecarenone. *Lancet* 1994; **343**: 1039.
4. Gattermann N, *et al.* No improvement of refractory sideroblastic anaemia with ubidecarenone. *Lancet* 1995; **345**: 1121-2.
5. Nagao T, *et al.* Treatment of warfarin-induced hair loss with ubidecarenone. *Lancet* 1995; **346**: 1104-5.
6. Pepping J. Coenzyme Q . *Am J Health-Syst Pharm* 1999; **56**: 519-21.
7. Khatta M, *et al.* The effect of coenzyme Q in patients with congestive heart failure. *Ann Intern Med* 2000; **132**: 636-40.
8. Tran MT, *et al.* Role of coenzyme Q10 in chronic heart failure, angina, and hypertension. *Pharmacotherapy* 2001; **21**: 797-806.
9. Huntington Study Group. A randomized, placebo-controlled trial of coenzyme Q10 and remacemide in Huntington's disease. *Neurology* 2001; **57**: 397-404.
10. Rahman S, *et al.* Neonatal presentation of coenzyme Q10 deficiency. *J Pediatr* 2001; **139**: 456-8.
11. Roffe L, *et al.* Efficacy of coenzyme Q10 for improved tolerability of cancer treatments: a systematic review. *J Clin Oncol* 2004; **22**: 4418-24.
12. Sándor PS, *et al.* Efficacy of coenzyme Q10 in migraine prophylaxis: a randomized controlled trial. *Neurology* 2005; **64**: 713-15.
13. Levy HB, Kohlhaas HK. Considerations for supplementing with coenzyme Q during statin therapy. *Ann Pharmacother* 2006; **40**: 290-4.
14. The NINDS NET-PD Investigators. A randomized clinical trial of coenzyme Q and GPI-1485 in early Parkinson disease. *Neurology* 2007; **68**: 20-8.
15. Rosenfeldt FL, *et al.* Coenzyme Q in the treatment of hypertension: a meta-analysis of the clinical trials. *J Hum Hypertens* 2007; **21**: 297-306.

## Preparations

**USP 31:** Ubidecarenone Capsules; Ubidecarenone Tablets.

**Proprietary Preparations** (details are given in Part 3)

**Arg.:** QX 100; **Braz.:** Coex†; Vinocard Q10; **Canad.:** Co-Q-10†; **Fr.:** Bio-Quinon Q10 Super†; Q10; **Hong Kong:** CoQuinone†; Equinon; **Hung.:** Myoquinon; **Indon.:** Co-En Q; Ubi-Q; **Ital.:** Coedieci†; Decafar; Decorenone; Iuvacor; Mioden†; Miotyn†; Mitocor†; Oropigma Gel; Tricoxen; Ubicardio†; Ubicor; Ubidenone; Ubidec; Ubimaio†; Ubiten†; Ubivis; **Jpn.:** Neuquinon; **Malaysia:** Alerten; Neo-Quinone; Neo-Quinone; **Philipp.:** Ad-dlife; Alerten; Neuquinon; **Pol.:** Envit Q ; Vita Care Q ; **Port.:** Q 10; Ubenezima; Ubicondrial†; **Singapore:** CoQuinone; Ubi-Q; **Thai.:** Bio-Quinone; Decaquinon; **UK:** Co-Q-10†; **USA:** Co-Q-10†; CoQuinone.

**Multi-ingredient:** **Arg.:** QX 10; **Canad.:** Mega AO; **Indon.:** Car-Q; Co-Q-10; Corset; Lycog RC-Q; **Ital.:** Agedin Plus; Coquin; Ener-E†; Visu Q10; **Philipp.:** Immuvit; Nutrotal; **UK:** Red Kooga Co-Q-10 and Ginseng.

## Ulinastatin (rINN)

Ulinastatina; Ulinastatine; Ulinastatinum; Urinastatin.

Улинастатин

**CAS** — 80449-31-6; 80449-32-7.

**Pharmacopoeias.** In *Jpn.*

## Profile

Ulinastatin is a glycoprotein proteolytic enzyme inhibitor isolated from human urine. It has been given by slow intravenous

injection or by intravenous infusion in acute pancreatitis (p.2361) and in acute circulatory insufficiency.

☊ References.

1. Ohwada M, *et al.* New endoscopic treatment for chronic pancreatitis, using contrast media containing ulinastatin and prednisolone. *J Gastroenterol* 1997; **32**: 216-21.
2. Sugita T, *et al.* Effect of a human urinary protease inhibitor (Ulinastatin) on respiratory function in pediatric patients undergoing cardiopulmonary bypass. *J Cardiovasc Surg* 2002; **43**: 437-40.
3. Tsujino T, *et al.* Ulinastatin for pancreatitis after endoscopic retrograde cholangiopancreatography: a randomized, controlled trial. *Clin Gastroenterol Hepatol* 2005; **3**: 376-83.

## Preparations

**Proprietary Preparations** (details are given in Part 3)

**Jpn.:** Miraclid.

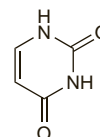
## Uracil (USAN)

BMS-205603-01; Sq-6201; Sq-7726; Sq-8493. 2,4(1*H*,3*H*)-pyrimidine-2,4-dione.

Урацил

$C_4H_4N_2O_2 = 112.1$ .

**CAS** — 66-22-8.



## Profile

Uracil is a pyrimidine base and one of the components of uridine nucleotides that form ribonucleic acid (p.2379). It inhibits dihydropyrimidine dehydrogenase and reduces the metabolism of fluorouracil; it is given orally with tegafur (p.776), an oral fluorouracil prodrug, to increase the bioavailability of fluorouracil.

## Preparations

**Proprietary Preparations** (details are given in Part 3)

**Cz.:** UFT; **Thai.:** UFUR.

**Multi-ingredient:** **Arg.:** Asofural†; UFT; **Austria:** UFT; **Belg.:** UFT; **Braz.:** UFT; **Denm.:** Uftoral; **Fr.:** UFT; **Ger.:** UFT; **Gr.:** UFT; **Hong Kong:** UFT; **Hung.:** UFT; **Israel:** UFT; **Ital.:** UFT; **Jpn.:** UFT; **Malaysia:** UFT; **Mex.:** UFT; **Neth.:** UFT; **Norw.:** UFT; **NZ:** Orzel†; **Philipp.:** Tefudex; UFT; **Port.:** UFT; **Rus.:** UFT (VФТ); **S.Afr.:** UFT; **Singapore:** UFT; **Spain:** UFT; **Swed.:** UFT; **Thai.:** UFT; **Turk.:** UFT; **UK:** Uftoral.

## Urazamide

5-Aminoimidazole-4-carboxamide ureidosuccinate.

$C_9H_{14}N_6O_6 = 302.2$ .

## Profile

Urazamide has been given orally in the treatment of hepatic disorders. It has also been given by intramuscular and intravenous injection.

## Preparations

**Proprietary Preparations** (details are given in Part 3)

**Ital.:** Carbaic†.

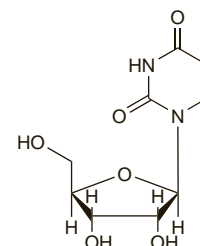
## Uridine

Uracil Riboside; Uridina; Urydyna. 1-β-D-Ribofuranosyluracil; 1-β-D-Ribofuranosylpyrimidine-2,4(1*H*,3*H*)-dione.

Уридин

$C_9H_{12}N_2O_6 = 244.2$ .

**CAS** — 58-96-8.



## Profile

Uridine is an endogenous uracil nucleoside involved in many biological processes; it is one of the components of nucleic acids (p.2355). Uridine is used in preparations containing other nucleosides in the treatment of corneal damage. It has been included in preparations for peripheral and cerebral vascular disorders and myopathies; it has also been used for liver disorders, anaemias,