products of the culture and lysis of *Mycobacterium tuberculosis* and/or *M. bovis*. It contains a suitable preservative that does not give rise to false-positive reactions. It is a colourless or pale yellow liquid; the diluted preparation may be a freeze-dried powder which upon dissolution gives a colourless or pale yellow liquid. Protect from light.

USP 31 (Tuberculin). A sterile solution derived from the concentrated, soluble products of growth of the tubercle bacillus (*Mycobacterium tuberculosis* or *M. bovis*) prepared in a special medium. It is provided either as Old Tuberculin, a culture filtrate adjusted to the standard potency by the addition of glycerol and isotonic sodium chloride solution, or as Purified Protein Derivative (PPD), a further purified protein fraction. Store at 2° to 8°.

Adverse Effects

Pain and pruritus may occur at the injection site, occasionally with vesiculation, ulceration, or necrosis in highly sensitive persons. Granuloma has been reported.

Nausea, headache, dizziness, malaise, rash, urticaria, oedema, and pyrexia have been reported occasionally; immediate systemic hypersensitivity, including anaphylaxis, has been reported rarely. There have also been rare reports of lymphangitis.

Hypersensitivity. There are rare reports[1-4] of severe anaphylactic or anaphylactoid reactions, occasionally fatal,[1] to tuberculin.

1. DiMaio VJM, Froede RC. Allergic reactions to the tine test. *JAMA* 1975; **233:** 769.
2. Spiteri MA, *et al.* Life threatening reaction to tuberculin testing. *BMJ* 1986; **293:** 243–4.
3. Wright DN, *et al.* Systemic and local allergic reactions to the tine test purified protein derivative. *JAMA* 1989; **262:** 2999–3000.
4. Sanofi Pasteur, Canada. Risk of serious allergic reactions following TUBERSOL [Tuberculin Purified Protein Derivative (Mantoux)] administration (issued 19th May 2005). Available at: http://www.hc-sc.gc.ca/dhp-mps/alt_formats/hpfb-dgpsa/pdf/medeff/tubersol_hpc-cps-eng.pdf (accessed 08/08/08)

Lymphangitis. Lymphangitis has been reported on 5 occasions after the Mantoux test and on 7 occasions after the Heaf test.[1] However, it was noted that a tuberculin test may have been inappropriate in some of these patients, particularly older subjects and those with evidence of healed tuberculous lesions.[2]

1. Morrison JB. Lymphangitis after tuberculin tests. *BMJ* 1984; **289:** 413.
2. Festenstein F. Lymphangitis after tuberculin tests. *BMJ* 1984; **289:** 625–6.

Precautions

Tuberculin should be given with caution to patients who have, or are suspected of having, active tuberculosis; although severe local reactions may occur in patients with active tuberculosis, sensitivity may be diminished if it is particularly severe. Sensitivity to tuberculin may also be diminished in the following conditions: viral or severe bacterial infection including HIV infection and infectious mononucleosis; neoplastic disease particularly lymphoma; sarcoidosis; corticosteroid or immunosuppressive therapy; recent use of live virus vaccines; ultraviolet light treatment; chronic renal failure; dehydration; and malnutrition.

Tuberculins may be adsorbed onto the surface of syringes and should therefore be given immediately.

Uses and Administration

Tuberculin skin tests are used to detect tuberculoprotein hypersensitivity when BCG vaccination is being considered or as an aid to diagnosis of tuberculosis. A person showing a specific sensitivity to tuberculin is considered to have been infected with the tubercle bacillus, though the infection may be inactive. Tuberculin for sensitivity testing is given by intradermal injection as in the Mantoux test. Multiple-puncture devices such as the Heaf test or tine tests have also been used, although they are no longer available in the UK.

In the UK, it is recommended that tuberculin testing should always be performed when BCG vaccination is being considered, and the **Mantoux** test is recommended. For a routine Mantoux test, a diluted solution of tuberculin purified protein derivative (PPD) is given by intradermal injection and the reaction, which is graded by the degree of induration, read 48 to 72 hours later. A retest with a stronger solution of PPD may be considered if the results of the initial test are unclear. Different commercial preparations vary in labelling format and potency, and doses and interpretation of results cannot therefore be extrapolated from one preparation to another.

Individuals with no or minimal reactions who have not previously been given BCG vaccines may be offered BCG vaccination. Patients with a positive reaction are considered to be hypersensitive to tuberculoprotein and should not be vaccinated. Investigation for the presence of active tuberculosis is generally only indicated for patients showing a strongly positive reaction to a tuberculin skin test. However, there are many factors that should be considered when interpreting the results; in addition to those listed under Precautions (see above), there are the effects of previous BCG vaccination, repeated tuberculin testing, and age. In some areas, a positive reaction may be a result of cross-sensitivity of the test to non-tuberculous mycobacteria (see below).

For the **Heaf** test, a solution of PPD is applied to the forearm using a multiple-puncture gun (Heaf gun), and the reaction evaluated about a week later.

The term **tine** test is generally used for disposable multiple-puncture devices coated with dried old tuberculin or PPD. However, some consider tine tests to be unreliable.

In some other countries, the population tested, the procedures used, and grading of reactions may differ slightly from that outlined above.

Tuberculins have also been used, in conjunction with other antigens, for anergy testing to assess the status of cell-mediated immunity.

Latent tuberculosis. Full eradication of tuberculosis from developed countries requires identification of latent as well as active cases.[1] Tuberculin testing has been in use for over 100 years and, while still considered a useful diagnostic agent for tuberculosis, the problems of false-positive reactions or reduced sensitivity to the test are well recognised.[1] Use of the test to identify latent disease has evolved with experience.[2] Previous BCG vaccination is one factor that significantly increases the likelihood of a false-positive reaction to tuberculin testing, which makes the diagnosis of latent tuberculosis particularly difficult.[3] Interpretation of the skin test should therefore be made by considering the induration size in the context of the individual clinical profile, including other risk factors for infection.[2,3] Three different approaches to assess the annual risk of tuberculous infection using tuberculin testing gave different results in a study of schoolchildren who had been given BCG vaccinations early in life.[4] This led the authors to conclude that the effect of previous BCG vaccination on tuberculin reactivity may be more complex than assumed, and that the tuberculin test is a poor indicator of latent infection. It has been suggested[2] that it is not necessary for low-risk persons in the general population of the USA to receive routine tuberculin testing for tuberculosis; high-risk groups of adults and children for whom screening might be warranted have been defined, and consensus recommendations made. An opinion has also been ventured[5] that tuberculin testing before BCG vaccination is not necessary in children in the UK.

1. Lee E, Holzman RS. Evolution and current use of the tuberculin test. *Clin Infect Dis* 2002; **34:** 365–70.
2. American Thoracic Society. Targeted tuberculin testing and treatment of latent tuberculosis infection. 1999. Available at: http://www.thoracic.org/sections/publications/statements/pages/mtpi/latenttb1-27.html (accessed 14/07/06)
3. Wang L, *et al.* A meta-analysis of the effect of Bacille Calmette Guérin vaccination on tuberculin skin test measurements. *Thorax* 2002; **57:** 804–9. Correction: *ibid.* 2003; **58:** 188.
4. Leung CC, *et al.* Tuberculin response in BCG vaccinated schoolchildren and the estimation of annual risk of infection in Hong Kong. *Thorax* 2005; **60:** 124–9.
5. Bothamley GH, *et al.* Tuberculin testing before BCG vaccination. *BMJ* 2003; **327:** 243–4.

Malignant disease. Benefit has been reported[1] in 2 patients with adult T-cell leukaemia/lymphoma predominantly involving the skin after local treatment with tuberculin purified protein derivative.

1. Kanekura T, *et al.* Purified protein derivative treatment for skin lesions of adult T-cell leukaemia/lymphoma. *Br J Dermatol* 1999; **140:** 767–8.

Non-tuberculous mycobacterial infection. The tuberculin skin test is not specific for *Mycobacterium tuberculosis*, but can also represent a cross-reaction caused by antigens on other non-tuberculous mycobacteria. Re-examination[1] of results from children with non-tuberculous mycobacterial infection concluded that the avian Mantoux test (avian tuberculin purified protein derivative (PPD) prepared from *M. avium*) was more sensitive than the human Mantoux test (tuberculin PPD prepared from *M. tuberculosis*) in the detection of non-tuberculous mycobacteria in regions with a low incidence of tuberculosis, and may be a useful aid to differential diagnosis in areas where tuberculosis is prevalent.

1. Daley AJ, Isaacs D. Differential avian and human tuberculin skin testing in non-tuberculous mycobacterial infection. *Arch Dis Child* 1999; **80:** 377–9.

Preparations

Ph. Eur.: Old Tuberculin for Human Use; Tuberculin Purified Protein Derivative for Human Use;
USP 31: Tuberculin.

Proprietary Preparations (details are given in Part 3)
Austria: Monotest; ***Belg.:*** Monovacc-Test†; ***Canad.:*** Tubersol; ***Fr.:*** Monotest†; Tubertest; ***Ger.:*** Tubergen-Test†; ***Gr.:*** Imotest Tuberculin; ***Ital.:*** Biocine Test PPD; Monotest†; ***NZ:*** Monotest†; Tubersol; ***S.Afr.:*** Biocine Test; Japan Freeze-Dried Tuberculin; Monotest†; ***Spain:*** Tubersol PPD†; ***Swed.:*** Monotest†; ***USA:*** Aplisol; Tubersol; ***Venez.:*** Imotest Tuberculina†.

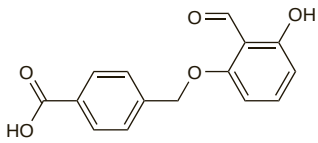
Multi-ingredient: ***Austral.:*** Multitest CMI; ***Austria:*** Multitest; ***Cz.:*** Imunoskintest†; ***Ger.:*** Multitest†; ***Israel:*** Multitest CMI; ***NZ:*** Multitest CMI†; ***S.Afr.:*** Multitest CMI†.

Tucaresol *(BAN, rINN)* ⊗

BW-589C; 589C; 589C80; Tucarésol; Tucaresolum. α-(2-Formyl-3-hydroxyphenoxy)-*p*-toluic acid.

Тукарезол

$C_{15}H_{12}O_5$ = 272.3.
CAS — 84290-27-7.



Profile

Tucaresol is reported to interact with haemoglobin to increase oxygen affinity. It has been investigated as an oral drug for the treatment of sickle-cell disease (p.1044). Tucaresol is also reported to have immunostimulant properties and is under investigation in HIV infection and hepatitis B. Hypersensitivity reactions have occurred.

◊ References.

1. Rolan PE, *et al.* The pharmacokinetics, tolerability and pharmacodynamics of tucaresol (589C80; 4[2-formyl-3-hydroxyphenoxymethyl]benzoic acid), a potential anti-sickling agent, following oral administration to healthy subjects. *Br J Clin Pharmacol* 1993; **35:** 419–25.
2. Arya R, *et al.* Tucaresol increases oxygen affinity and reduces haemolysis in subjects with sickle cell anaemia. *Br J Haematol* 1996; **93:** 817–21.
3. Peck RW, *et al.* Effect of food and gender on the pharmacokinetics of tucaresol in healthy volunteers. *Br J Clin Pharmacol* 1998; **46:** 83–6.
4. Gori A, *et al.* Immunomodulation induced by tucaresol in HIV infection: results of a 16 week pilot Phase I/II trial. *Antivir Ther* 2004; **9:** 603–14.

Javanese Turmeric

Curcuma Zanthorrhiza; Curcumae Javanicae; Curcumae xanthorrhizae rhizoma; Geltonšaknių ciberžolių šakniastiebiai; Gurkmeja, javanesisk; Jaavan kurkuma; Jávai-kurkuma gyökértörzs; Oddenek kurkumy žlutokořenné; Temoe lawacq; Temoe Lawak; Témoé-lawaq.

Pharmacopoeias. In *Eur.* (see p.vii).
Ph. Eur. 6.2 (Turmeric, Javanese). It consists of the dried rhizome, cut in slices, of *Curcuma xanthorrhiza*. It contains not less than 5% v/w of essential oil and not less than 1% of dicinnamoyl methane derivatives expressed as curcumin, both calculated with reference to the anhydrous drug. It has an aromatic odour. Protect from light.

Profile

Javanese turmeric is an ingredient of preparations indicated for biliary and gastrointestinal disorders. It is a close relative of the spice turmeric (p.1473), which has been used similarly.

Irritable bowel syndrome. For reference to the ineffectiveness of Javanese turmeric in patients with irritable bowel syndrome see under Fumitory, p.2307.

Preparations

Proprietary Preparations (details are given in Part 3)
Cz.: Gallentee†; ***Ger.:*** Bilagit Mono†; Curcu-Truw; Curcumen; Infi-tract; Pankreaplex mono.

Multi-ingredient: ***Austria:*** Choleodoron; ***Fr.:*** Hepaclem; ***Ger.:*** Bilisan Duo; Cholosom SL†; Cholosom-Tee; Divalol W†; Enzym-Harongan; Gallexier; Hepaticum novo†; Infi-tract†; ***Hong Kong:*** Hepatofalk; ***Indon.:*** Curliv; Curliv Plus; Curson; Gramuno; Hepa-Q; Hepacell; Hepatofalk Planta; Hepimun; Librozym; Norflam; Verona; ***S.Afr.:*** Choleodoron; ***Singapore:*** Hepatofalk Planta; ***Switz.:*** Choleodoron†.

Turpentine Oil

Aetheroleum Terebinthinae; Esencia de Trementina; Essence de Térébenthine; Oleum Terebinthinae; Oleum Terebinthinae Depuratum; Rectified Turpentine Oil; Spirits of Turpentine; Térébenthine, huile essentielle de; Terebentin Yağı; Terebinthini aetheroleum; Terebintin Esansı; Trementina, aceite esencial de.

Pharmacopoeias. In *Chin.*, *Eur.* (see p.vii), and *Jpn*.
Ph. Eur. 6.2 (Turpentine Oil, Pinus Pinaster Type; Terebinthini Aetheroleum ab Pinum Pinastrum). An essential oil obtained by steam distillation, followed by rectification at a temperature below 180°, from the oleoresin obtained by tapping *Pinus pinaster*. A suitable antioxidant may be added. It contains 70.0 to 85.0% α-pinene, 0.5 to 1.5% camphene, 11.0 to 20.0% β-pinene, maximum 1% car-3-ene, 0.4 to 1.5% β-myrcene, 1.0 to 7.0% limonene, 0.2 to 2.5% longifolene, 0.1 to 3.0% β-caryophyllene, and maximum 1.0% caryophyllene oxide.
A clear, colourless or pale yellow liquid with a characteristic odour. Relative density 0.856 to 0.872. Store in well-filled airtight containers at a temperature not exceeding 25°. Protect from light.

Adverse Effects

In poisoning with turpentine oil there may be local burning and gastrointestinal upset, coughing and choking, pulmonary oedema, excitement, coma, fever, tachycardia, liver damage, haematuria, and albuminuria. Fatalities have occurred.

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.

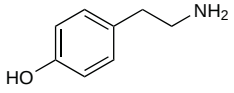
Multi-ingredient: ***Arg.:*** Atomo Desinflamante C; Bronco Etersan; Fluido; Notoxin; Otocalmia; Rati Salil Crema; ***Austral.:*** Goanna Heat Cream; Goanna Salve; Vicks Vaporub; ***Austria:*** Acimont; Baby Luuf; Bronchostop; Carl Baders Divinal; Emser Nasensalbe; Ilon Abszess; Kinder Luuf; Leukona-Rheuma-Bad; Luuf Balsam; Pe-Ce; Piniment; Rubriment; Salhumin; Scottopect; Trauma-Salbe warmend; Tussamag; Vulpuran; Wick Vaporub; ***Belg.:*** Algis-Spray; Reflexspray; Vicks Vaporub; ***Braz.:*** A Curitybina; Aliviol; Analgen†; Angino-Rub; Benegel; Frixopel; Gelflex; Gelofrix; Gelol†; Gelonevral†; Massageol; Mentalol†; Mialgex†; Nevrol; Oleo Eletrico†; Salimetin†; Traumac; Traumagel; Vick Vaporub; ***Canad.:*** Cal Mo Dol; Cerumol; ***Chile:*** Balsamo Leon†; Calorub Nueva Formula; Hansaplast Descongestionante; Mentobalsam; ***Cz.:*** Ilon Abszess; Viprosal B†; ***Fin.:*** Vicks Vaporub; ***Fr.:*** Dinacode†; Lumbalgine; Ozothine; Ozothine a la Diprophylline; Vicks Vaporub; ***Ger.:*** Em-eukal†; Emser Nasensalbe N†; Erkaltungsbalsam-ratiopharm E Salbe†; Hevertopect; Hevertopect 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-Forte; ***India:*** Clearwax; Flexi-muv; Waxolve; ***Indon.:*** Opino; Sloan's Liniment; ***Israel:*** Deep Heat Rub; Ment-O-Cap; ***Ital.:*** Capsolin; Vicks Vaporub; ***Malaysia:*** Thermorub; ***Neth.:*** Luuf Verkoudheidsbalsem; Luuf Verkoudheidsbalsem (voor babies); Luuf Verkoudheidsbalsem (voor Kinderen); Vicks Vaporub; ***NZ:*** Vicks Vaporub; ***Pol.:*** Analgol; Analgolan; Capsigel N; Deep Heat†; Derhotill; Dip Hot; Herbolen; Inhalol; Neo-Capsiderm; Pulmonil; Reumatik; Rub-Arom; Wick Vaporub; ***Port.:*** Balsamo Analgesico Basi; Balsamo Analgesico Labesfal; Calicida Indiano; Freimax†; Lauromentol†; ***Rus.:*** Capsicam (Капсикам); Carmolis Fluid (Кармолис Жидкость)†; Doktor Mom (Доктор Мом); Olimetin (Олиметин)†; Suprima-Plus (Суприма-Плюс); Viprosal B (Випросал B); ***S.Afr.:*** Balsem Sulphuris; Deep Heat Rub; Haarlemensis; Puma Balm; Respisniffers; Sloan's Liniment Rub; Vicks Vaporub; Woodwards Inhalant; ***Spain:*** Dologex†; Embrocacion Gras; Linimento Klari†; 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; Bugusептil; Capsalgine; Gelocaps; Kataljin; Vicks Vaporub; ***UK:*** Deep Heat Rub; Dragon Balm; Ellimans; Goddards Embrocation; Gonne Balm; Modern Herbals Muscular Pain; Nasciodine; Nine Rubbing Oils; Vicks Vaporub; Waxwane†; ***USA:*** Vicks Vaporub; ***Venez.:*** Friccion Aromatica.

Tyramine Hydrochloride ⊗

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

$C_8H_{11}NO,HCl$ = 173.6.

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



(tyramine)

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 phaeochromocytoma.

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.[1]

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; Ubidécarénone; Ubidecarenonum; Ubidekarenon; Ubidekarenonas; Ubidekarenoni; Ubiquinone-10. 2-Deca(3-methylbut-2-enylene)-5,6-dimethoxy-3-methyl-*p*-benzoquinone.

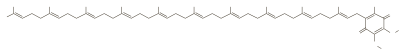
Убидекаренон

$C_{59}H_{90}O_4$ = 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 antoxidant 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†; Eiquinon; ***Hung.:*** Myoqinon; ***Indon.:*** Co-En Q; Ubi-Q; ***Ital.:*** Coedieci†; Decafar; Decorenone; Iuvacor; Miodene†; Miotyn†; Mitocor†; Oropigma Gel; Tricoxen; Ubicardio†; Ubicor; Ubidenone; Ubidex; Ubimaior; Ubiten†; Ubivis; ***Jpn:*** Neuquinon; ***Malaysia:*** Alerten; Bio-Quinone; Neuquinon; ***Philipp.:*** Addlife; Alerten; Neuquinon; ***Pol.:*** Envit Q ; Vita Care Q ; ***Port.:*** Q 10; Ubenzima; 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; Corsel; Lycoq; RG-Q; ***Ital.:*** Agedin Plus; Coqun; 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.

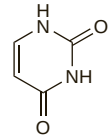
Uracil *(USAN)*

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

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.:*** Asofurtal; 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 (УФТ); ***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.: Carbaica†.

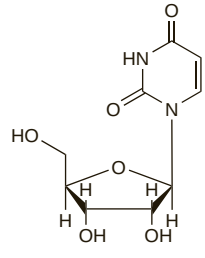
Uridine

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,