longed in patients with renal impairment and in neonates.

Cefuroxime is widely distributed in the body including pleural fluid, sputum, bone, synovial fluid, and aqueous humour, but only achieves therapeutic concentrations in the CSF when the meninges are inflamed. It crosses the placenta and has been detected in breast milk.

Cefuroxime is excreted unchanged, by glomerular filtration and renal tubular secretion, and high concentrations are achieved in the urine. On injection, most of a dose of cefuroxime is excreted within 24 hours, the majority within 6 hours. Probenecid competes for renal tubular secretion with cefuroxime resulting in higher and more prolonged plasma concentrations of cefuroxime. Small amounts of cefuroxime are excreted in bile.

Plasma concentrations are reduced by dialysis.

Uses and Administration

Cefuroxime is a second-generation cephalosporin antibacterial used in the treatment of susceptible infections. These have included bone and joint infections, bronchitis (and other lower respiratory-tract infections), gonorrhoea, meningitis (although treatment failures have been reported in *H. influenzae* meningitis), otitis media, peritonitis, pharyngitis, sinusitis, skin infections (including soft-tissue infections), and urinary-tract infections. It is also used for surgical infection prophylaxis. For details of these infections and their treatment, see under Choice of Antibacterial, p.162.

Administration and dosage. Cefuroxime is given orally as the acetoxyethyl ester, cefuroxime axetil, in the form of tablets or suspension with or after food, or by injection as the sodium salt. Cefuroxime sodium may be given by deep intramuscular injection, by slow intravenous injection over 3 to 5 minutes, or by intravenous infusion. Doses of cefuroxime axetil and cefuroxime sodium are expressed in terms of the equivalent amount of cefuroxime; 1.20 g of cefuroxime axetil and 1.05 g of cefuroxime sodium are each equivalent to about 1 g of cefuroxime.

Usual oral doses for adults are 125 mg twice daily for uncomplicated urinary-tract infections and 250 to 500 mg twice daily for respiratory-tract infections. A dose for children more than 3 months of age is 125 mg twice daily or 10 mg/kg twice daily to a maximum of 250 mg daily. Children over 2 years of age with otitis media may be given 250 mg twice daily or 15 mg/kg twice daily to a maximum of 500 mg daily.

By injection the usual adult dose is 750 mg of cefuroxime every 8 hours but in more severe infections 1.5 g may be given intravenously every 8, or in some cases every 6, hours. Infants and children can be given 30 to 60 mg/kg daily, increased to 100 mg/kg daily if necessary, given in 3 or 4 divided doses. Neonates may be given similar total daily doses but in 2 or 3 divided doses.

Adults with pneumonia or with acute exacerbations of chronic bronchitis may respond to sequential therapy with parenteral cefuroxime 1.5 g twice daily or 750 mg twice daily respectively, followed by oral cefuroxime 500 mg twice daily in each case.

For Lyme disease in adults, an oral dose of 500 mg is given twice daily for 20 days.

For details of reduced dosage of cefuroxime in patients with renal impairment, see below.

For the treatment of meningitis due to sensitive strains of bacteria, cefuroxime is given intravenously in adult doses of 3 g every 8 hours. Infants and children are given 200 to 240 mg/kg daily intravenously in 3 or 4 divided doses, which may be decreased to 100 mg/kg daily after 3 days or when there is clinical improvement. For neonates, a dose of 100 mg/kg daily, decreased to 50 mg/kg daily when indicated, may be used.

In the treatment of gonorrhoea, a single dose of 1.5 g by intramuscular injection, divided between 2 injection sites, has been used. A single 1-g oral dose of cefuroxime has been given for uncomplicated gonorrhoea. In each case an oral dose of probenecid 1 g may be given with cefuroxime.

For surgical infection prophylaxis, the usual dose is 1.5 g of cefuroxime intravenously before the procedure; this may be supplemented by 750 mg intramuscularly every 8 hours for up to 24 to 48 hours depending upon the procedure. For total joint replacement, 1.5 g of cefuroxime powder may be mixed with the methylmethacrylate cement.

◊ Reviews.
1. Perry CM, Brogden RN. Cefuroxime axetil: a review of its antibacterial activity, pharmacokinetic properties and therapeutic efficacy. *Drugs* 1996; **52:** 125–58.
2. Scott LJ, *et al.* Cefuroxime axetil: an updated review of its use in the management of bacterial infections. *Drugs* 2001; **61:** 1455–1500.

Administration in renal impairment. Parenteral doses of cefuroxime may need to be reduced in renal impairment. Licensed product information suggests the following doses based on creatinine clearance (CC):

- CC 10 to 20 mL/minute: 750 mg twice daily
- CC less than 10 mL/minute: 750 mg once daily

Patients undergoing haemodialysis should receive an additional 750-mg dose following each dialysis; those undergoing continuous peritoneal dialysis may be given 750 mg twice daily.

Preparations

BP 2008: Cefuroxime Axetil Tablets; Cefuroxime Injection;
USP 31: Cefuroxime Axetil for Oral Suspension; Cefuroxime Axetil Tablets; Cefuroxime for Injection; Cefuroxime Injection.

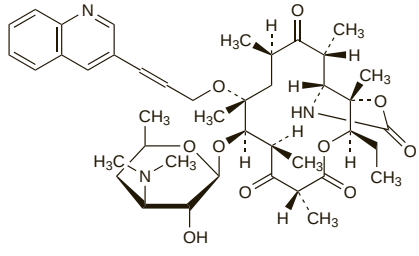
Proprietary Preparations (details are given in Part 3)
Arg.: Ceflux†; Cefogram†; Cefurox; Deltrox†; Ligramex†; ***Austral.:*** Zinnat; ***Austria:*** Curocef; Furoxim; Zinnat; ***Belg.:*** Axetine; Cefurim; Doccefuro; Kefurox†; Zinacef; Zinnat; ***Braz.:*** Cefunorth†; Cefuran†; Medcef; Zinacef; Zinnat; ***Canad.:*** Ceftin; Kefurox†; Zinacef; ***Chile:*** Curocef; Zinnat; ***Cz.:*** Axetine; Lifurox†; Xorimax; Zinacef; Zinnat; Zinoxime; ***Denm.:*** Zinacef; Zinnat; ***Fin.:*** Zinacef; Zinnat; ***Fr.:*** Cepazine; Zinnat; ***Ger.:*** Cefu; Cefudura; Cefuhexal; Cefurax; Cefuro-Puren; Cefurox-Wolff; Elobact; Zinacef†; Zinnat; ***Gr.:*** Anaptivan; Cefoprim†; Cefur; Cefuroprol; Cerofene; Ceruxim; Cupax; Ecoline†; Feacef; Foucacillin; Fredyr; Furaxil; Galemin; Genephoxal; Gonif; Interbion; Lyoprovir; Medoxem; Mevecan†; Mosalan; Nelabocin; Nipogalin; Normafenac; Receant; Saxetil; Sedopan; Vekfazolin; Yokel; Zagorine; Zetagal; Zilisten; Zinacef; Zinadol; ***Hong Kong:*** Anikef; Axetine†; Zinacef; Zinnat; ***Hung.:*** Cefurin; Ceroxim; Cexim†; Xorim; Xorimax; Zinacef; Zinnat; ***India:*** Altacef; Cefasyn; Cefogen; Cefoxim; Forcef; Supacef; ***Indon.:*** Anbacim; Cefurox; Celocid; Cethixim; Kalcef; Kenacef; Oxtercid; Roxbi; Sharox; Zinacef; Zinnat; ***Irl.:*** Ceftal; Zinacef; Zinnat; ***Israel:*** Cefurax; Kefurim; Zinacef; Zinnat; ***Ital.:*** Biociclin; Biofurex†; Cefoprim; Cefumax†; Cefur†; Cefurex†; Cefurin; Colifossim†; Curoxim; Deltacef†; Duxima; Ipacef†; Itorex; Kefox†; Kesint; Lafurex; Oraxim; Supero; Tilexim; Zinnat; Zinocep; Zoref; ***Malaysia:*** Ceflour; Efurox; Furoxime; Zinacef; Zinnat; Zocef; ***Mex.:*** Cefagen; Cefuracet; Cetoxil; Froxal; Fucerox; Lemoxin†; Magnaspor; Novador; Ximaken; Xorufec; Zinnat; ***Neth.:*** Cefofix; Zinacef; Zinnat; ***Norw.:*** Zinacef; ***NZ:*** Zinacef; Zinnat; ***Philipp.:*** Aeruginox; Cervin; Clovixime; Fubaxyn; Furocef; Furocem; Furoxy; Infekor; Kefox; Keunzef; Laxinat; Loxatrel; Panaxim; Profurex; Romicef; Ruxim; Sharox; Shincef; Unoximed; Xorimax; Zegen; Zinacef; Zinnat; ***Pol.:*** Biofuroksym; Bioracef; Ceroxim; Novocef; Oframax; Plixym; Tarsime; Xorim; Xorimax; Zamur; Zinacef; Zinnat; ***Port.:*** Antibioxime; Cefaricida†; Cefofix; Cefrix†; Curoxime; Furaxetil†; Lusocef; Pluscef; Zipos; Zoref; ***Rus.:*** Axetine (Аксетин); Kefstar (Кефстар); Ketocef (Кетоцеф); Zinacef (Зинацеф); Zinnat (Зиннат); ***S.Afr.:*** Cefasyn; Cefu-Hexal; Ceroxim; Cipofix†; Intracef; Lifurom†; Medaxime; Zefroxe; Zinacef; Zinnat; ***Singapore:*** Bearcef; Ceftil; Shincef; Zinacef; Zinnat; ***Spain:*** Curoxima; Lifurox†; Nivador; Selan; Zinnat; ***Swed.:*** Zinacef; Zinnat; ***Switz.:*** Cefurim; Zinacef; Zinat; ***Thai.:*** Axetine†; Axurocef; Cefamar; Cefogen†; Cefurim; Farmacef; Furoxime; Magnaspor; Zinacef; Zinnat; Zonef; ***Turk.:*** Aksef; Cefatin; Enfexia; Multisef; Oraceftin; Sefaktil; Sefuroks; Zinnat; ***UAE:*** Cefuzime; ***UK:*** Zinacef; Zinnat; ***USA:*** Ceftin; Zinacef; ***Venez.:*** Xorim; Zencef; Zinacef; Zinnat.

Cethromycin *(USAN, rINN)*

A-195773; Abbott-195773; ABT-773; Céthromycine; Cethromycinum; Cetromicina. (3a*S*,4*R*,7*R*,9*R*,10*R*,11*R*,13*R*,15*R*,15a*R*)-4-Ethyl-3a,7,9,11,13,15-hexamethyl-11-{[3-(quinolin-3-yl)prop-2-enyl]oxy}-10-{[3,4,6-trideoxy-3-(dimethylamino)-β-D-*xylo*-hexopyranosyl]oxy}octahydro-2*H*-oxacyclotetradecino[4,3-*d*]oxazole-2,6,8,14(1*H*,7*H*,9*H*)-tetrone.

Цетромицин

$C_{42}H_{59}N_3O_{10}$ = 765.9.
CAS — 205110-48-1.



Profile

Cethromycin is a ketolide antibacterial under investigation for the treatment of susceptible respiratory-tract infections.

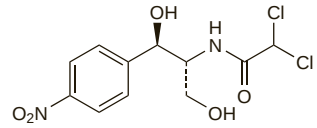
◊ References.
1. Dougherty TJ, Barrett JF. ABT-773: a new ketolide antibiotic. *Expert Opin Invest Drugs* 2001; **10:** 343–51.
2. Zhanel GG, *et al.* The ketolides: a critical review. *Drugs* 2002; **62:** 1771–1804.
3. Zhanel GG, *et al.* Ketolides: an emerging treatment for macrolide-resistant respiratory infections, focusing on S. pneumoniae. *Expert Opin Emerg Drugs* 2003; **8:** 297–321.
4. Reinert RR. Clinical efficacy of ketolides in the treatment of respiratory tract infections. *J Antimicrob Chemother* 2004; **53:** 918–27.
5. Anonymous. Cethromycin: A-195773, A-195773-0, A-1957730, Abbott-195773, ABT 773. *Drugs R D* 2007; **8:** 95–102.
6. Hammerschlag MR, Sharma R. Use of cethromycin, a new ketolide, for treatment of community-acquired respiratory infections. *Expert Opin Invest Drugs* 2008; **17:** 387–400.

Chloramphenicol *(BAN, rINN)*

Chloramfenikol; Chloramfenikolis; Chloramphénicol; Chloramphenicolum; Chloranfenicol; Cloranfenicol; Klóramfenikol; Kloramfenikol; Kloramfenikoli; Laevomycetinum. 2,2-Dichloro-*N*-[(α*R*,β*R*)-β-hydroxy-α-hydroxymethyl-4-nitrophenethyl]acetamide.

Хлорамфеникол

$C_{11}H_{12}Cl_2N_2O_5$ = 323.1.
CAS — 56-75-7.
ATC — D06AX02; D10AF03; G01AA05; J01BA01; S01AA01; S02AA01; S03AA08.
ATC Vet — QD06AX02; QD10AF03; QG01AA05; QJ01BA01; QJ51BA01; QS01AA01; QS02AA01; QS03AA08.



NOTE. CPL is a code approved by the BP 2008 for use on single unit doses of eye drops containing chloramphenicol where the individual container may be too small to bear all the appropriate labelling information.

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

Ph. Eur. 6.2 (Chloramphenicol). A substance produced by the growth of certain strains of *Streptomyces venezuelae*, but now mainly prepared synthetically. A white, greyish-white or yellowish-white, fine crystalline powder or fine crystals, needles, or elongated plates. Slightly soluble in water; freely soluble in alcohol and in propylene glycol. Protect from light.

USP 31 (Chloramphenicol). Fine, white to greyish-white or yellowish-white, needle-like crystals or elongated plates. Soluble 1 in 400 of water; freely soluble in alcohol, in acetone, in ethyl acetate, and in propylene glycol. pH of a 2.5% suspension in water is between 4.5 and 7.5. Its solutions are practically neutral to litmus. It is reasonably stable in neutral or moderately acid solutions. Store in airtight containers.

Chloramphenicol Palmitate *(BANM, rINNM)*

Chloramfenikolio palmitatas; Chloramfenikol-palmitát; Chloramfenikolu palmitynian; Chloramphenicol α-Palmitate; Chloramphénicol, palmitate de; Chloramphenicoli palmitas; Kloramfenikolipalmitaatti; Kloramfenikolpalmitat; Klóramfenikol-palmitát; Palmitato de cloranfenicol; Palmitylchloramphenicol.

Хлорамфеникола Пальмитат

$C_{27}H_{42}Cl_2N_2O_6$ = 561.5.
CAS — 530-43-8.
ATC — D06AX02; D10AF03; G01AA05; J01BA01; S01AA01; S02AA01; S03AA08.
ATC Vet — QD06AX02; QD10AF03; QG01AA05; QJ01BA01; QS01AA01; QS02AA01; QS03AA08.

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

Ph. Eur. 6.2 (Chloramphenicol Palmitate). A fine, white or almost white, unctuous, powder. M.p. 87° to 95°. Chloramphenicol palmitate shows polymorphism and the thermodynamically stable form has low bioavailability following oral administration. Practically insoluble in water; sparingly soluble in alcohol; freely soluble in acetone; very slightly soluble in hexane. Protect from light.

USP 31 (Chloramphenicol Palmitate). A fine, white, unctuous, crystalline powder, having a faint odour. M.p. 87° to 95°. Insoluble in water; sparingly soluble in alcohol; freely soluble in acetone and in chloroform; soluble in ether; very slightly soluble in hexane. Store in airtight containers.