Sodium content. Each g of mezlocillin sodium contains about 1.7 mmol of sodium. As mezlocillin sodium has a lower sodium content than carbenicillin sodium, hypernatraemia and hypokalaemia are less likely to occur.

Interactions
As for Benzylpenicillin, p.214.

Cefotaxime. For the effect of mezlocillin on the clearance of cefotaxime, see p.228.

Antimicrobial Action
Mezlocillin has a similar antimicrobial action to piperacillin (p.315). Its activity against *Pseudomonas aeruginosa* is less than that of azlocillin or piperacillin.

Pharmacokinetics
Mezlocillin is not absorbed from the gastrointestinal tract to any significant extent. It is well absorbed after intramuscular injection, with peak plasma concentrations of 15 to 25 micrograms/mL 45 to 90 minutes after a single dose of 1 g. It is reported to have nonlinear dose-dependent pharmacokinetics. Between 16 and 42% of mezlocillin in the circulation is bound to plasma proteins. Mezlocillin is reported to have a plasma half-life of about 1 hour; this is slightly prolonged in neonates, and in patients with renal impairment half-lives of up to about 6 hours have been reported.

Mezlocillin is widely distributed in body tissues and fluids. It crosses the placenta into the fetal circulation and small amounts are distributed into breast milk. There is little diffusion into CSF except when the meninges are inflamed.

Mezlocillin is reported to be metabolised to a limited extent. About 55% of a dose is excreted unchanged in the urine by glomerular filtration and tubular secretion within 6 hours of a dose, hence achieving high urinary concentrations. High concentrations are also found in the bile; up to 30% of a dose has been reported to be excreted by this route.

Plasma concentrations are enhanced by probenecid.

Mezlocillin is removed by haemodialysis, and to some extent by peritoneal dialysis.

Uses and Administration
Mezlocillin is a ureidopenicillin with uses similar to those of piperacillin (p.316). It is commonly used with an aminoglycoside; however they should be given separately as they have been shown to be incompatible.

Administration and dosage. Mezlocillin is given by injection as the sodium salt. Doses are expressed in terms of the equivalent amount of mezlocillin; 1.07 g of mezlocillin sodium is equivalent to about 1 g of mezlocillin. Dosage may need to be reduced in renal impairment. It may be given by slow intravenous injection over 3 to 5 minutes, by intravenous infusion over 30 minutes, or by deep intramuscular injection. Single intramuscular doses should not exceed 2 g.

For the treatment of serious infections, 200 to 300 mg/kg daily in divided doses may be given intravenously. For life-threatening infections, up to 350 mg/kg daily may be used, but the total daily dose should not normally exceed 24 g. For uncomplicated urinary-tract infections, a dose of 1.5 to 2 g may be given intramuscularly or intravenously every 6 hours.

Uncomplicated gonorrhoea may be treated by a single intramuscular or intravenous dose of mezlocillin 1 to 2 g. Probenecid 1 g orally may be given at the same time or up to 30 minutes before the injection.

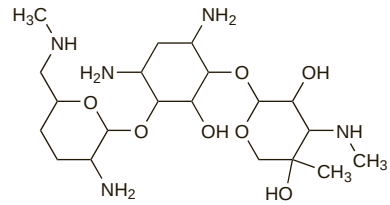
For the prophylaxis of infection during surgery, an intravenous pre-operative dose of mezlocillin 4 g, repeated at 6-hourly intervals for 2 further doses, may be given.

Preparations
USP 31: Mezlocillin for Injection.

Proprietary Preparations (details are given in Part 3)
Austria: Baypen; ***Fr.:*** Baypen; ***Ger.:*** Baypen; ***Israel:*** Baypen†; ***Ital.:*** Baypen.
Multi-ingredient: ***Ger.:*** Optocillin†.

Micronomicin Sulfate *(pINNM)*
Gentamicin C_{2B} Sulphate; KW-1062 (micronomicin); 6′*N*-Methylgentamicin C_{1A} Sulphate; Micronomicin Sulphate; Micronomicine, Sulfate de; Micronomicini Sulfas; Sagamicin Sulphate; Sulfato de micronomicina. *O*-2-Amino-2,3,4,6-tetradeoxy-6-(methylamino)-*α*-D-*erythro*-hexopyranosyl-(1→4)-*O*-[3-deoxy-4-*C*-methyl-3-(methylamino)-β-L-arabinopyranosyl-(1→6)]-2-deoxy-D-streptamine hemipentasulphate.

Микрономицина Сульфат
$(C_{20}H_{41}N_5O_7)_2,5H_2SO_4$ = 1417.5.
CAS — 52093-21-7 (micronomicin).
ATC — S01AA22.
ATC Vet — QS01AA22.



(micronomicin)

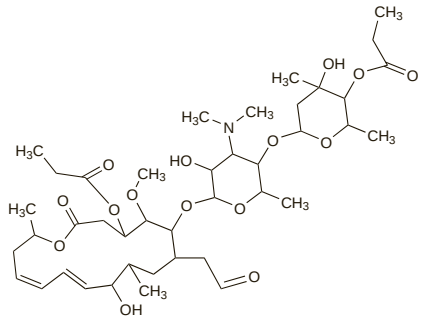
Pharmacopoeias. In *Chin.* and *Jpn*.

Profile
Micronomicin is an aminoglycoside with general properties similar to those of gentamicin (p.282). It is given as the sulfate and doses are expressed in terms of micronomicin; 183 mg of micronomicin sulfate is equivalent to about 120 mg of micronomicin. It is given by intramuscular injection or by intravenous infusion over 30 minutes to 1 hour in doses of 120 to 240 mg daily in 2 or 3 divided doses. Dosage should be adjusted based on serum-micronomicin concentration monitoring. It is also used topically as eye drops or ointment in a concentration of 0.3% for infections of the eye.

Preparations
Proprietary Preparations (details are given in Part 3)
Ital.: Luxomicina; ***Jpn:*** Sagamicin; ***Singapore:*** Sagamicin†.

Midecamycin *(rINN)*
Midecamicina; Midecamycin A_1; Midécamycine; Midecamycinum; Mydecamycin. 7-(Formylmethyl)-4,10-dihydroxy-5-methoxy-9,16-dimethyl-2-oxo-oxacyclohexadeca-11,13-dien-6-yl 3,6-dideoxy-4-*O*-(2,6-dideoxy-3-*C*-methyl-α-L-*ribo*-hexopyranosyl)-3-(dimethylamino)-β-D-glucopyranoside 4′,4″-dipropionate.

Мидекамицин
$C_{41}H_{67}NO_{15}$ = 814.0.
CAS — 35457-80-8.
ATC — J01FA03.
ATC Vet — QJ01FA03.



Pharmacopoeias. In *Jpn*.

Midecamycin Acetate *(rINNM)*
Acecamycin; Acetato de midecamicina; Midecamycin Diacetate; Midécamycine, Acétate de; Midecamycini Acetas; Miocamycin; Miokamycin; MOM; Ponsinomycin; 1532-RB. 9,3″-Diacetylmidecamycin; Leucomycin V 3^B, 9-diacetate $3,4^B$-dipropanoate.

Мидекамицина Ацетат
$C_{45}H_{71}NO_{17}$ = 898.0.
CAS — 55881-07-7.
ATC — J01FA11.
ATC Vet — QJ01FA11.

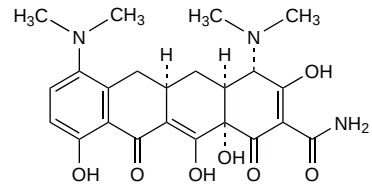
Pharmacopoeias. In *Jpn*.

Profile
Midecamycin is a macrolide antibacterial produced by the growth of *Streptomyces mycarofaciens* with actions and uses similar to those of erythromycin (p.269) but it is somewhat less active. It is given orally for the treatment of susceptible infections as the acetate in usual doses of 0.9 to 1.8 g daily in 2 or 3 divided doses. It has also been given as the base.

Preparations
Proprietary Preparations (details are given in Part 3)
Arg.: Myoxam†; ***Belg.:*** Merced; ***Fr.:*** Mosil; ***Gr.:*** Miocacin; Miocamen; ***Hong Kong:*** Medemycin; ***Ital.:*** Macroral; Midecin; Miocamen; Miokacin; ***Jpn:*** Medemycin; Miocamycin; ***Mex.:*** Midecamin†; ***Port.:*** Miocacin; ***Rus.:*** Macropen (Макропен); ***Spain:*** Momicine; Myoxam; Normicina†; ***Thai.:*** Miotin.

Minocycline *(BAN, USAN, rINN)*
Minociclina; Minocyclinum; Minocyklin; Minosiklin; Minosykliini. (4*S*,4a*S*,5a*R*,12a*S*)4,7-Bis(dimethylamino)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-1,11-dioxonaphthacene-2-carboxamide; 6-Demethyl-6-deoxy-7-dimethylaminotetracycline.

Миноциклин
$C_{23}H_{27}N_3O_7$ = 457.5.
CAS — 10118-90-8;.
ATC — A01AB23; J01AA08.
ATC Vet — QA01AB23; QJ01AA08.



Minocycline Hydrochloride *(BANM, rINNM)*
Hidrocloruro de minociclina; Minociklin-hidroklorid; Minociklino hidrochloridas; Minocycline, chlorhydrate de; Minocyclini hydrochloridum; Minocyklin-hydrochlorid; Minocyklinhydroklorid; Minocykliny chlorowodorek; Minosykliinihydrokloridi.

Миноциклина Гидрохлорид
$C_{23}H_{27}N_3O_7,HCl$ = 493.9.
CAS — 13614-98-7.
ATC — A01AB23; J01AA08.
ATC Vet — QA01AB23; QJ01AA08.

Pharmacopoeias. In *Eur.* (see p.vii), *Jpn*, and *US*.
Ph. Eur. 6.2 (Minocycline Hydrochloride Dihydrate). A yellow, hygroscopic, crystalline powder. Sparingly soluble in water; slightly soluble in alcohol. It dissolves in solutions of alkali hydroxides and carbonates. A 1% solution in water has a pH of 3.5 to 4.5. Store in airtight containers. Protect from light.
USP 31 (Minocycline Hydrochloride). A yellow crystalline powder. Sparingly soluble in water; slightly soluble in alcohol; practically insoluble in chloroform and in ether; soluble in solutions of alkali hydroxides and carbonates. pH of a solution in water containing the equivalent of minocycline 1% is between 3.5 and 4.5. Store in airtight containers. Protect from light.

Incompatibility. Preparations of minocycline hydrochloride have an acid pH and incompatibility may reasonably be expected with alkaline preparations or with drugs unstable at low pH.

Adverse Effects and Precautions
As for Tetracycline, p.347.

Gastrointestinal disturbances with minocycline are reported to be less frequent than with the less well absorbed tetracyclines.

Oesophageal ulceration has occurred and may be a particular problem if capsules or tablets are taken with insufficient fluid or in a recumbent posture: minocycline should be taken with at least half a glass of water, in an upright position, and well before going to bed.

Vestibular adverse effects including dizziness or vertigo may occur with minocycline, particularly in women. Patients should be advised not to drive or operate machinery if affected. Tinnitus and decreased hearing have been reported rarely.

There have also been reports, some fatal, of a hypersensitivity syndrome (comprising eosinophilia, fever, rash, and varying additional symptoms), a lupus-like syndrome, and a serum-sickness-like syndrome (both comprising arthralgia, fever, and joint stiffness or swelling, amongst other symptoms).

Minocycline may also cause hyperpigmentation of the skin (see below).