

African trypanosomiasis. Although there is no established alternative treatment for *Trypanosoma brucei rhodesiense* infections that are resistant to melarsoprol (see p.827), metronidazole and suramin were effective in 1 patient.¹

1. Foulkes JR. Metronidazole and suramin combination in the treatment of arsenical refractory rhodesian sleeping sickness—a case study. *Trans R Soc Trop Med Hyg* 1996; **90**: 422.

Preparations

BP 2008: Metronidazole Gel; Metronidazole Intravenous Infusion; Metronidazole Oral Suspension; Metronidazole Suppositories; Metronidazole Tablets;

USP 31: Metronidazole Gel; Metronidazole Injection; Metronidazole Tablets.

Proprietary Preparations (details are given in Part 3)

Arg.: Bexon; Colpoflin; Dazotron; Epaq†; Etronil; Flagyl; Format; Ginkan; Gynotran; Metral; Metrocev; Metrolocal; Nalox; Noritate†; Padet; Repligen; Rozex; Tarems; Tolbin; Tricofin; Trimstat†; **Austral.:** Flagyl; Metrogel; Metronide; Rozex; **Austria:** Acscace; Anaerobex; Elyzol; Rozex; Trichex; **Belg.:** Anaeromet†; Flagyl; Pharnaflex†; Rosaced; **Braz.:** Ambrosil†; Amebil†; Astergyl†; Candem; Dalzolston; Flagyl; Flanzol; Helmizol; Metrizol†; Metrodax†; Metrogyl†; Metronib†; Metronide; Metroniflex; Metronil; Metronin; Metronix; Metrotrix†; Metroval; Metrozol; Minegyl†; Neo Metrodazol; Odonid; Rozex; **Canada:** Flagyl; Florazole; Metrocream; Metrogel; Metrolo-ton; NidaGel; Noritate; Novo-Nidazol†; Triakide; **Chile:** Deprocid; Flagyl; Geloderim; Kabizol; Medazol; Metrocream; Metrogel; Metro-past; Noritate†; **Cz.:** Defflamon†; Efloran; Entizol; Klion†; Medazol†; Rosalox; Rozex; **Denm.:** Elyzol; Flagyl; Metrogel†; Rozex; Zidoval; **Fin.:** Flagyl; Rozex; Rosazol; Trikozol; Zidoval; **Fr.:** Elyzol; Flagyl; Rosiced; Rozacreme; Rozazel; Rozex; **Ger.:** Arilin; Clont; Elyzol; Flagyl; Fossyol†; Infectodlon†; Metrocream; Metrogel; Metronid-Puren†; Metronimerck; Metronour; Metron†; Rosiced; Vagimid; **Gr.:** Colpocin-T; Elyzol Dental; Emedal; Flagolin; Flagyl; Gnostol; Metrazol; Metrogel; Periotret; Robaz; Rosiced; Trichovagil; Tricodazole; Unitrin; **Hong Kong:** Elyzol; Flagyl; Gynoplax; Marphazole; Me-tole; Metrogel; Noritate; Qualigyl; Rozex; Unigo; **Hung.:** Klion; Rozex; Sup-plin; **India:** Aristogyl; Flagyl; Giardyl†; Metrogel; Monizole; Unimezol†; **In-don.:** Anmerob; Biatron; Corsagyl; Dumozol; Farnat; Fladex; Flagyl; Flameta; Fortagyl; Metrofusin; Molazol; Nidazole; Promuba; Supplin; Tisma-zol; Trichodazol; Trogiar; Trogyl; Vagzol; **Ir.:** Anabact†; Flagyl; Metrogel; Metrotop; Rozex; **Israel:** Elyzol; Flagyl; Metrogel; Noritate; Rozex; Venogyl; Zidoval; **Ital.:** Defflamon; Elyzol; Flagyl; Rosased†; Rozex; Vagilen; Zidoval; **Malaysia:** Flagyl; Frotin; Protagyl†; Ranigyl†; Rozex; Setrozole†; **Mex.:** Ameblin; Antral†; Biomona; Biotazol; Dasmetro; Dualizol; Elyzol; Epaq; Fag-izol; Fartricon; Flagenase; Flagenol; Flagepat; Flagyl; Flamin†; Flactec; Fresen-izol; Hemestal; Laglan; Lamblit; Lozad; Medazol; Medizol; Messeldazol; Me-tosan†; Metricom; Metrizol; Metrobendizol; Metrocream; Metrogel; Metroson; Milezol; Nidralon-V; Nidrozol; Nitromidager; Ortrizol; Otrazol; Oxazol-V; Planizol; Promibazol; Prozinol; Retofar†; Samonil; Selegyl†; Servi-zol; Solumidazol; Stomflifer; Valpar; Vanestrin-V; Vertisal; **Neth.:** Flagyl; Metrogel; Rosiced; Rozex; **Norw.:** Elyzol; Flagyl; Rozex; Zidoval; **NZ:** Flagyl; Rozex; Trichozone; **Philipp.:** Ameryl; Anerobia; Flagyl; Metroinox; Metrodal; Norstene; Patryl; Robaz; Rodazid; Servizol; Tricomycin; Triconex; Tridel; Vamogyl; Zol; **Pol.:** Metrosept; Rozex; **Port.:** Dumozol; Flagyl; Metro-derme; Norstene; Rodermil; Roseless; Rosiced; **Rus.:** Efloran (Эфлоран); Flagyl (Флагил); Klion (Клион); Metrogyl (Метрогил); Metroseptol (Метроसेптол); Rosamet (Розамет); Trichopol (Трихопол); **S.Afr.:** Bem-etrazole; Flagyl; Medamet; Metagyl†; Metazol; Metrazole; Metrostat; Naro-bic; Rozex; Trichazole; Zagyl; Zobacide; **Singapore:** Fladex; Flagyl; Meda-zole; Metrozole†; MND†; Nizole; Rozex; **Spain:** Amotein; Flagyl; Rozex; Tricowas B; Zidoval; **Swed.:** Elyzol†; Flagyl; Rozex; Zidoval; **Switz.:** Arilin; Elyzol; Flagyl; Metrolag; Perilox; Rivozol†; Rosalox; Rozex; **Thai.:** Asiazole; Biogyl; Elyzol†; Flagyl; Med-Tricocid†; Medazy†; Mefiron; Menisole; Mepagyl†; Mesolex†; Metrazole; Metrocide; Metrogyl; Metrolex; Metrovid; Milanidazole; Robaz; Tricomed; Unigo; Vagil†; Vagyl; **Turk.:** Flagyl; Metrajil; Metrazol; Metrosele; Nidazol; Roza; **UAE:** Negazole; **UK:** Acea; Anabact; Elyzol; Flagyl; Metrogel; Metrolyl; Metroxa; Metrotop; Metrozol; Noritate; Norzol; Rozex; Vaginyl; Zidoval; Zyomet; **USA:** Flagyl; Metrocream; Metro-gel; Metrogel Vaginal; Noritate; Protostat; Vandazole; **Venez.:** Bactrizol; Fle-gyl; Menizol; Metren; Metris; Metrogel; Metrovax; Rozex.

Multi-ingredient Arg.: Bexon; Ciprocort; Estilomicin; Farm-X Duo; Farm-X Ginecologico; Flagystatin; Ginal Cent; Ginkan; Linfol; Linfol Cicatri-zante; Mailen; Monizol Cort; Naxo TV; Neocolpobent†; Ovumix; Pelvicillin NF; Pentol; Septigny; Tratomax; Vagical Plus; **Austral.:** Soma-c-MA; **Aus-tria:** Helicoin; **Braz.:** Bio-Vagin; Colpatrin; Colpist; Colpistar; Colpistatin; Donnage†; Flagyl Nistatina; Fungimax; Ginestatin; Minegyl C/Nistatina†; Ni-stazol†; Periodontil; Profargil†; Tricolpez; **Canada:** Vagi Biotic; Vagimax; **Canada:** Flagystatin; Losec 1-2-3 M; Rosazol; **Cz.:** Klion-D; Rodogyl†; **Fin.:** Flagyl Comp; Helipak A; Helipak T; Losec Helira†; **Fr.:** Birodogyl; Missior; Rodogyl; Tergynan; **Hung.:** Klion-D; **India:** Aristogyl Plus; Aristogyl-F; Bac-igyl-N†; Dyra-de-M; Dysfur-M†; Entamizole; Flagyl-F†; Kaitin MF; Metrogyl-F†; Neocip M; NM1 Powder; Okaflox M; Powergyl; Quqyl; **Indon.:** Fladystin; Flagystatin; Trichostatic; Vagistin; **Ital.:** Meclon; **Malaysia:** Neo-Penotran; Rodogyl; **Mex.:** Acenil; Amebyl; Diodolina; Eskapar Compuesto; Flagenase 400; Flagicil; Flagystatin V; Gynotran; Lambliquin; Madecassol C; Metodine; Metrodiodyl; Metrofur; Metroviform†; Norecil; Nysmosons-V; Promibasol-Plus; Rodogyl; Stomflifer Plus; Vagitol-V; **Philipp.:** Flagystatin; Ginestatin; Neo-Penotran; **Pol.:** Gynalgin; **Rus.:** Gynalgin (Гиналгин); Klion-D (Клион-Д); Metrogyl Denta (Метрогил Дента); Metrogyl Plus (Метрогил Плюс); Neo-Penotran (Нео-Пенотран); **Singapore:** Flagystatin; Neo-Penotran; **Spain:** Blaostimulina; Rhodogyl; **Turk.:** Neo-Penotran; Nidazol-M; **UK:** HeliMet†; **USA:** Helidac; Pylera.

Monensin (BAN, USAN, rINN)

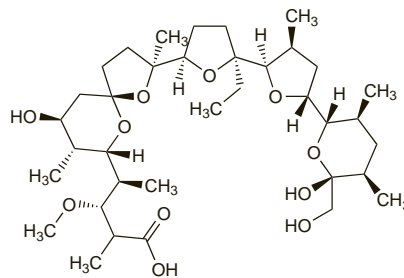
Lilly-67314; Monensina; Monensinum. 4-{2-[2-Ethyl-3'-methyl-5'-(tetrahydro-6-hydroxy-6-hydroxymethyl-3,5-dimethylpyran-2-yl)]perhydro-2,2'-bifuran-5-yl]-9-hydroxy-2,8-dimethyl-1,6-di-oxaspiro[4.5]dec-7-yl}-3-methoxy-2-methylpentanoic acid.

МОНЕНЗИН

$C_{36}H_{62}O_{11}$ = 670.9.

CAS — 17090-79-8.

ATC Vet — QP51AH03.



Pharmacopoeias. In US for veterinary use only.

USP 31 (Monensin). A mixture of antibiotic substances produced by *Streptomyces cinnamonensis*.

Monensin Sodium (BANM, rINNM)

Monensin Sodique; Monensina sódica; Natrii Monensinum.

Натрий Монензин

$C_{36}H_{61}NaO_{11}$ = 692.9.

CAS — 22373-78-0.

Pharmacopoeias. In US for veterinary use only.

USP 31 (Monensin Sodium). An off-white to tan crystalline powder. Slightly soluble in water; soluble in chloroform and in methyl alcohol; practically insoluble in petroleum spirit. Avoid moisture and excessive heat.

Profile

Monensin is an antiprotozoal used as the sodium salt in veterinary practice for the prevention of coccidiosis in poultry and as a growth promoter for cattle.

Narasin (BAN, USAN, rINN)

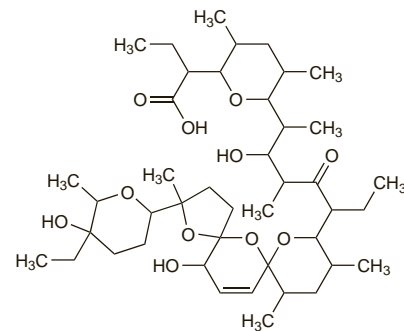
Compound 79891; Lilly-79891; Narasina; Narasine; Narasinum. 2-(6-[5-[2-(5-Ethyltetrahydro-5-hydroxy-6-methylpyran-2-yl)-15-hydroxy-2,10,12-trimethyl-1,6,8-trioxaspiro[4.1.5.3]penta-dec-13-en-9-yl]-2-hydroxy-1,3-dimethyl-4-oxoheptyl]tetrahydro-3,5-dimethylpyran-2-yl)butyric acid.

Наразин

$C_{43}H_{72}O_{11}$ = 765.0.

CAS — 55134-13-9.

ATC Vet — QP51AH04.



Pharmacopoeias. In US for veterinary use only.

USP 31 (Narasin Granular). It contains narasin mixed with suitable carriers and inactive ingredients prepared in a granular form that is free-flowing and free of aggregates. Narasin is a white to off-white crystalline powder. Soluble in water and in methyl alcohol.

Profile

Narasin, an antibiotic produced by *Streptomyces aureofaciens*, is an antiprotozoal used in veterinary practice for the prevention of coccidiosis in chickens.

Nicarbazin (BAN)

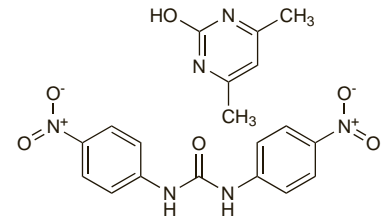
Nicarbazina. An equimolecular complex of 1,3-bis(4-nitrophenyl)urea ($C_{13}H_{10}N_4O_5$) and 4,6-dimethylpyrimidin-2-ol ($C_6H_8N_2O$).

Никарбазин

$C_{19}H_{18}N_6O_6$ = 426.4.

CAS — 330-95-0.

ATC Vet — QP51AE03.



Profile

Nicarbazin is an antiprotozoal used in veterinary practice for the prevention of coccidiosis in poultry.

Nifuratel (BAN, USAN, rINN)

Methylmercadone; Nifurateel; Nifuratelum. 5-Methylthiomethyl-3-(5-nitrofururylideneamino)-2-oxazolidone.

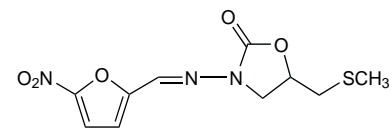
Нифурател

$C_{10}H_{11}N_3O_5S$ = 285.3.

CAS — 4936-47-4.

ATC — G01AX05.

ATC Vet — QG01AX05.



Adverse Effects

Adverse effects associated with nifuratel include gastrointestinal disturbances, peripheral neuropathy, and thrombocytopenic purpura. Allergic reactions, hepatotoxicity, blood dyscrasias, and pulmonary reactions similar to those seen with the structurally related drug nitrofurantoin have been reported rarely. Haemolytic anaemia may occur in patients with G6PD deficiency given nifuratel.

Hypersensitivity. There have been several reports of contact dermatitis associated with nifuratel, including a report after only one application of nifuratel ointment in a man whose wife was undergoing treatment with nifuratel vaginal pessaries.¹

1. Bedello PG, et al. Contact dermatitis from nifuratel. *Contact Dermatitis* 1983; **9**: 166.

Precautions

Nifuratel should not be given to patients with renal impairment, neuropathies, or G6PD deficiency.

Interactions

A disulfiram-like reaction may occur in patients taking alcohol while on nifuratel therapy.

Pharmacokinetics

When taken orally nifuratel is absorbed from the gastrointestinal tract. A metabolite, with activity against bacteria but not against trichomonads, is excreted in the urine.

Uses and Administration

Nifuratel is a nitrofurantoin derivative with a broad antimicrobial spectrum. It is active against the protozoan *Trichomonas vaginalis* and has an antibacterial spectrum similar to that of nitrofurantoin and some antifungal activity against *Candida albicans*. Although other drugs are preferred, nifuratel has been used to treat susceptible infections of the genito-urinary tract in oral doses of 200 to 400 mg three times daily. It has also been given vaginally.

Preparations

Proprietary Preparations (details are given in Part 3)

Austria: Macmiror; **Cz.:** Macmiror; **Ger.:** Inimur; **Hong Kong:** Macmiror; **Ital.:** Macmiror; **Mex.:** Macmiror; **Pol.:** Macmiror; **Rus.:** Macmiror (Макмирор).

Multi-ingredient Cz.: Macmiror Complex; **Hong Kong:** Macmiror Complex; **Ital.:** Macmiror Complex; **Mex.:** Macmiror Complex V; **Pol.:** Macmiror Complex; **Port.:** Dafnegil; **Rus.:** Macmiror Complex (Макмирор Комплекс).