

METROCIP

BROAD-SPECTRUM BACTERICIDAL ANTIBIOTOC

ORAL TABLETS

REG. SAN.: RIP-02-FAR-01548

Formula:

Each 100 g contains:

Metronidazole	35.720 g
Ciprofloxacin Hydrochloride	14.288 g
Excipients q.s.	100 g

Each METROCIP 10 tablet contains:

1 Metronidazole	250 mg
Ciprofloxacin	111 mg
Excipients q.s.	1 tablet

Each METROCIP 20 tablet contains:

2 Metronidazole	500 mg
Ciprofloxacin	222 mg
Excipients q.s.	1 tablet

SPECIES AND DOSAGE:



DOSAGE AND ADMINISTRATION

SPECIES	REFERENCE DOSE	PRACTICAL DOSE
Canines / Felines	Metronidazole: 25 mg/kg Ciprofloxacin: 10 mg/kg	1 tablet/10 kg every 12 hours
Ferrets	Metronidazole: 25 mg/kg Ciprofloxacin: 10 mg/kg	¼ tablet/2.5 kg every 12–24 hours
Rabbits / Guinea Pigs	Metronidazole: 25 mg/kg Ciprofloxacin: 10 mg/kg	¼ tablet/2.5 kg every 12 hours

Route of Administration: Oral.

The duration of treatment depends on the condition being treated, unless otherwise directed by the Veterinarian.



SPECIES	REFERENCE DOSE	PRACTICAL DOSE
Canines	Metronidazole: 25–50 mg/kg Ciprofloxacin: 5–15 mg/kg	1 tablet/20 kg every 12 hours

Route of Administration: Oral.

The duration of treatment depends on the condition being treated, unless otherwise directed by the Veterinarian.

INDICATIONS:

METROCIP is an antibiotic and antiprotozoal combination effective for the control and treatment of local, complex, systemic, and/or mixed infections of respiratory, enteric, genitourinary, osteoarticular, central nervous system, and soft tissue origin caused by bacteria sensitive to metronidazole and ciprofloxacin. Ideal for continuing treatment in patients who show initial clinical improvement with parenteral therapy, maintaining an effective dose while minimizing side effects and improving treatment safety and tolerability.

ROUTE OF ADMINISTRATION: Oral.

PHARMACOKINETICS:

METRONIDAZOLE

Oral absorption of metronidazole is nearly complete in animals and is relatively good following oral administration (60%–100%). Oral bioavailability in dogs is high but variable among patients, ranging from 50% to 100%. Peak plasma levels are reached within one hour after administration. Metronidazole is highly lipophilic and is rapidly and extensively distributed once absorbed. It is distributed to most tissues and body fluids, including bone, abscesses, the central nervous system (CNS), and seminal fluid. It is metabolized primarily in the liver via various pathways. Metabolites and the unchanged drug are excreted in urine and feces. For the elimination half-life in patients with normal renal and hepatic function, the dosage varies by species.

CIPROFLOXACIN

It is well absorbed following oral administration in most species. Oral absorption can range from 74% to 97%. In cats, oral absorption is low (22%–33%) and is not effective against Gram-positive bacteria, but it is effective at doses of 10 mg/kg every 12 hours. Ciprofloxacin is partially biotransformed in the liver into inactive metabolites. Ciprofloxacin is a metabolite of enrofloxacin; these metabolites are excreted in both urine and feces. Approximately 15–50% is excreted unchanged in the urine, via both tubular secretion and glomerular filtration. Between 20–40% of a dose appears in the feces following biliary excretion. About 10–40% of circulating enrofloxacin is metabolized to ciprofloxacin in most species. Due to dual elimination (renal and hepatic), patients with severely impaired renal function may have a slightly prolonged half-life and higher serum levels, but a dose adjustment may not be necessary. The elimination half-life is approximately 2.5 hours in dogs.

MECHANISM OF ACTION:

METRONIDAZOLE

Metronidazole is an antibacterial and antiprotozoal drug. It is a second-generation nitroimidazole whose activity involves the generation of free radicals through metabolism within protozoa and bacteria. Metronidazole alters the organism's DNA through a reaction with an intracellular metabolite. Its action is specific to anaerobic bacteria and protozoa. It is active against some protozoa, including species of *Trichomonas*, *Giardia*, and intestinal protozoan

parasites. It also has in vitro activity against anaerobic bacteria and *Helicobacter* spp.

CIPROFLOXACIN

Ciprofloxacin is a second-generation fluoroquinolone. It acts by inhibiting DNA gyrase and the cellular synthesis of DNA and RNA. Ciprofloxacin binds to bacterial DNA gyrase with an affinity 100 times greater than that for mammalian DNA gyrase. It is active against Gram negative bacilli, including enterobacteria, and some Gram-positive cocci, including staphylococci. It is more active against *P. aeruginosa* than other fluoroquinolones, but resistance may develop, as well as in Gram-negative bacilli—including enterobacteria and other methicillin-resistant bacterial strains—and *Staphylococcus* spp.

PRECAUTIONS- WARNINGS- CONTRAINDICATIONS:

- Do not administer to patients with kidney or liver disease.
- Do not administer to small-breed dogs or puppies aged 2–8 months.
- Do not administer to patients with known hypersensitivity to the active ingredients, debilitated patients, or pregnant or lactating females.
- Do not administer concurrently with aluminum containing antacids, warfarin, cyclosporine, theophylline, nonsteroidal anti-inflammatory drugs, or nitrofurantoin.
- Use caution in working dogs—such as those trained to detect explosives, drugs, and other substances— with a history of seizures, congestive heart failure, or blood dyscrasia.

DRUG INTERACTIONS

- Metronidazole may enhance the effects of warfarin and cyclosporine by inhibiting the metabolism of these drugs.
- Aluminum-containing antacids impair the absorption of ciprofloxacin.
- Ciprofloxacin increases the concentration of theophylline; if administered together with nonsteroidal anti-inflammatory drugs (NSAIDs), seizures may occur.
- Nitrofurantoin impairs the absorption of ciprofloxacin.
- There is a synergistic effect between ciprofloxacin and third-generation cephalosporins, aminoglycosides, and broad-spectrum penicillins.

ADVERSE REACTIONS

- The use of metronidazole may impair the sense of smell in working dogs that serve as detectors of explosives, drugs, and other agents.
- Following administration, it may cause excessive salivation, nausea, regurgitation, vomiting, decreased appetite, glossitis, and stomatitis, which can be managed with symptomatic treatment.

WITHDRAWAL PERIOD:

Do not administer to animals intended for human consumption.

COMMERCIAL PRESENTATIONS:

Tablets 10 × 20 tablets.

Tablets 20 × 12 tablets.

