



Dejando huella en la
Industria de la Salud Animal

MICROFLOX 2.5%

REGISTRATION NUMBER Q-7972-111

Formula

Each tablet contains:

Enrofloxacin 25mg

Excipient cbp 1 ml

Presentation: MICROFLOX 2.5% Flask with 60 ml



DIRECTIONS.

It is recommended for otitis externa, septicemias, enterobacteria, prevention and treatment of osteomyelitis, skin infections, respiratory urogenital, prostate and wounds. It has a post-antibiotic effect on *Staphylococcus intermedius*, *Enterobacter* spp, *Pseudomonas aeruginosa*, *Klebsiella pneumoniae*, *Pasteurella multocida*, *Escherichia coli*, *Salmonella typhimurium*, *Streptococcus aureus* and *Rickettsia rickettsii*

Description:

MICROFLOX 2.5% contains micronized enrofloxacin, which allows better digestive absorption, bioavailability, faster tissue penetration and better liposolubility. It acts against Gram positive bacteria, Gram negative *Mycoplasma* spp, and some *Rickettsias*.

It inhibits cell division and bacterial growth rate, prevents tissue colonization and promotes phagocytosis.

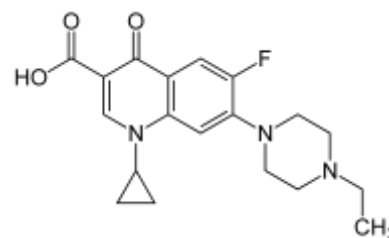
Enrofloxacin is characterized by good antimicrobial activity, even against microorganisms that are not very susceptible or resistant to other antimicrobials commonly used in animals. It has an excellent pharmacokinetic behavior of easy administration, almost complete absorption and a tissue distribution that guarantees minimum inhibitory concentrations (MIC) against the microorganisms that cause most diseases in animals.

Its therapeutic index is high, and it can be administered without major problems in combination therapies with other drugs. It represents, without a doubt, an excellent tool for clinical management in veterinary medicine.

Chemical structure

Enrofloxacin is a fluoroquinolone derived from nalidixic acid, it has a basic chemical nucleus called "dihydroquinoline" or 4-quinolone ring.

It has a low molecular weight, which favors its tissue penetration. At its isoelectric point it has the lowest solubility and is highly lipophilic.



Mechanism of action

It is a concentration dependent antibiotic and can also act as a time dependent on gram+ bacteria. It inhibits DNA-spin, a bacterial enzyme involved in most biological processes that compromise DNA, such as transcription, recombination, replication and DNA repair. DNA-spinyase is a type II Topoisomerase, and is the only one of its kind capable of introducing a negative helical super-roll into the DNA molecule, playing a critical role in maintaining superhelical genomic density. They also inhibit IV topoisomerase, essential in the chromosomal segregation of prokaryotic cells. In some species of bacteria, such as *E. coli*, the main site of action is DNA-girase while in others, such as *S. aureus*, it is Topoisomerase IV. Considering that these enzymes have somewhat different functions, it is likely that bacteria differ in their responses according to what the point of action is.



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Pharmacokinetics

Microflox 2.5% in dogs it is rapidly absorbed orally, with a bioavailability of 72%, approximately 83%, or close to 100% according to different authors, reaching maximum concentrations within 0.5 to 2 hours. It is also well absorbed orally in cats, with a bioavailability of almost 100%. Distribution volume of 2 to 4 liters per kg and excellent tissue penetration (including phagocytes).

Distribution

In most animal species the volume of distribution of Microflox 2.5% is high, being much higher than that reached by beta-lactams and aminoglycosides. It is mainly concentrated in saliva, nasal discharge; in mucosa, epithelium and bronchial secretion, as well as in the liver and urinary tract. They penetrate well into lung tissue, lining fluid and alveolar macrophages, resulting in concentrations greater than serum, arriving more quickly. After 12 hours of application the concentrations remained higher in the tissues than in the serum, with the highest values in bile and urine, later in decreasing order, in liver, kidneys, heart, lungs and spleen. The lowest concentrations were found in the brain.

Metabolism and excretion

Fluorquinolones are eliminated from the body mainly by hepatic metabolism and renal excretion. They are usually partially metabolized in the liver, and excreted in bile and urine at high concentrations of active drug (unchanged drug or active metabolite). The common metabolic pathways of these agents are dealkylation, glucuronization, oxidation, sulfoxidation, acetylation, and piperazin ring rupture. In animals renal excretion is variable, although glomerular filtration occurs for the unattached fraction, and also active tubular secretion. Glomerular filtration and tubular secretion allow high urinary concentrations to be reached. The percentage of elimination through bile varies between species. Trans-epithelial elimination through the gastrointestinal wall generates high concentrations at colonization sites of pathogenic bacteria, and undoubtedly contributes to the high efficacy of this antimicrobial to bacterial enteritis. There are indications that entero-hepatic circulation may occur. Enrofloxacin is partially metabolized to ciprofloxacin, which is responsible for a considerable portion of the antimicrobial activity.

DOSE:

- **Piglets:** 5 mg/kg body weight, 1mL/5 kg weight, Beef producing cattle: 2.5 mg/kg weight, 1mL/10 kg weight, every 24 hours for 3 to 5 days.
- **Canines and Felines:** 5 mg/kg body weight, 1mL/5 kg weight, every 24 hours for 3-5 days.
- **Mustelids (Ferrets) and Small Mammals: (rabbits, hedgehogs, chinchillas, gerbils, guinea pigs, hamsters, mice and rats):** 5-10 mg/kg of weight, which is equivalent to 1mL/2.5-5 kg of weight, every 12 hours for 14 days.
- **Ornamental birds (paserinos, psittacidos and pigeons)** 5-10 mg/kg of weight, which is equivalent to one 1mL/2.5-5 kg of weight, every 8 hours for 3 to 5 days.

WITHDRAWAL PERIOD:

Pigs 10 days.
Beef producing cattle 5 days.

VÍA DE ADMINISTRACIÓN. Oral.

Adverse effects

In dogs under 28 days and in animals in gestation and in general in growing animals, it should be avoided because abnormalities in cartilage may occur. At doses of 5-10 mg/kg in dogs and cats for 10 days no adverse effects have been found. The most common adverse effect is nausea, but there have been reports in cats at doses of 20mg/kg of degeneration or retinal changes, mydriasis, vision loss. At the gastrointestinal level in dogs and cats anorexia, vomiting, increased liver enzymes diarrhea may occur; neurologically: ataxia, depression, lethargy.



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WARNINGS AND/OR RESTRICTIONS:

Any enrofloxacin produces erosion of the articular cartilage, so its use in growing animals is not recommended. Do not exceed the recommended dose because it decreases its effectiveness and increases genotoxicity on eukaryotic cells. DO NOT use in cattle producing milk intended for human consumption. DO NOT administer in egg-producing birds for human consumption, nor in replacement birds 14 days before the start of laying.

Keep in a dry place, cool at no more than 30°C and protected from direct sunlight. Do not leave it within reach of children, pets and disabled people. Any unused veterinary medicinal product, residues derived thereof and empty containers must be disposed of safely and in accordance with local regulations. **Product for exclusive use in Veterinary Medicine.**

CONSULT YOUR VETERINARIAN

Its sale requires a prescription

Bibliography

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Plumb, D.C. (2010). Plumb, Manual of Veterinary Pharmacology. Autonomous City of Buenos Aires, Argentina: Inter-Médica 6th edition.

Sumano LH, Ocampo CL and Gutiérrez OL. Veterinary Pharmacology. 4th ed. Designs and Impressions Aranda S. A. de C. V. 2015

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