Summary of Product Characteristics

1 NAME OF THE VETERINARY MEDICINAL PRODUCT

Enrox Flavour 150 mg Tablets for dogs

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Each tablet contains:

Active substance :
Enrofloxacin 150 mg

Excipients:
For the full list of excipients, see section 6.1.

3 PHARMACEUTICAL FORM

Tablet.
Round slightly biconvex, cream to light brownish tablets with possible visible white or darker spots, one side scored and bevel-edged.
The tablets can be divided into halves.

4 CLINICAL PARTICULARS

4.1 Target Species

Dogs.

4.2 Indications for use, specifying the target species

The product is for use in dogs in the treatment of bacterial infections of the alimentary, respiratory and urogenital tracts, skin, secondary wound infections and otitis externa where clinical experience, supported where possible by sensitivity testing of the causal organism, indicates enrofloxacin as the drug of choice.

4.3 Contraindications

Do not use in dogs less than 1 year of age or in exceptionally large breeds of dog with a longer growth period less than 18 months of age, as articular cartilage may be affected during the period of rapid growth.
Do not use in case of hypersensitivity to the active substance or to any of the excipients.
Do not use in dogs having seizure disorders, since enrofloxacin may cause CNS stimulation.
Do not use for prophylaxis.

4.4 Special warnings for each target species

Please see point 4.3.

4.5 Special precautions for use

i) Special precautions for use in animals

Fluoroquinolones should be reserved for the treatment of clinical conditions
which have responded poorly, or are expected to respond poorly to other classes of antimicrobials.
Whenever possible, use of fluoroquinolones should be based on susceptibility testing. Use of the product deviating from the instructions given in the SPC may increase the prevalence of bacteria resistant to the fluoroquinolones and may decrease the effectiveness of treatment with other quinolones due to the potential for cross-resistance.

Official and local antimicrobial policies should be taken into account when the product is used.
Do not use in case of resistance to quinolones, as there exists almost complete cross resistance to other quinolones and complete cross resistance to other fluoroquinolones.

Do not exceed the recommended dosage.
Use the product with caution in dogs with severe renal or hepatic impairment.

ii) Special precautions to be taken by the person administering the veterinary medicinal product to animals

Wash hands after use.
In case of contact with the eyes, wash with plenty of clean water.
In case of accidental ingestion, seek medical advice immediately *and show the package leaflet or the label to the physician.*
People with known hypersensitivity to (fluoro)quinolones should avoid contact with the product.

4.6 Adverse reactions (frequency and seriousness)

During the period of rapid growth, enrofloxacin may affect articular cartilage development.
In very rare cases (less than 1 animal in 10,000 animals, including isolated reports) vomiting and anorexia are observed.

4.7 Use during pregnancy, lactation or lay

As enrofloxacin passes into maternal milk, use only according to the benefit/risk assessment by the responsible veterinarian.

4.8 Interaction with other medicinal products and other forms of interactions

Do not combine with tetracyclines, phenicols or macrolides because of potential antagonistic effects.
Concurrent administration of fluoroquinolones may increase the action of oral anticoagulants.
Do not combine with theophylline as this could lead to a prolonged elimination of this substance.
Concurrent administration of magnesium or aluminum containing substances may be followed by retarded absorption of enrofloxacin.

4.9 Amounts to be administered and administration route

Do not exceed the recommended dose. The dosage rate of enrofloxacin is 5 mg/kg given orally once daily or as a divided dose twice daily for 5 to 10 days with or without food.
The duration of treatment in dogs may be extended depending on the clinical response and the judgement of the responsible veterinary surgeon.
To ensure a correct dosage body weight should be determined as accurately as possible to avoid underdosing.

The daily dose is achieved as follows:
Large dogs: one tablet per 30 kg body weight.

4.10 Overdose (symptoms, emergency procedures, antidotes), if necessary

In accidental overdose vomiting, diarrhoea and CNS/behavioural changes may occur. There is no antidote and treatment should be symptomatic. If necessary, administration of aluminium- or magnesium-containing antacids or activated carbon can be used to reduce absorption of enrofloxacin.

4.11 Withdrawal period(s)

Not applicable.

5 PHARMACOLOGICAL or IMMUNOLOGICAL PROPERTIES

Pharmacotherapeutic group: Antibacterials for systemic use, quinolone and quinoxaline antibacterials, fluoroquinolones.

ATCvet code: QJ01MA90

5.1 Pharmacodynamic properties

Enrofloxacin is bactericidal in action with activity against Gram positive and Gram negative bacteria and mycoplasmas. The mechanism of action of the quinolones is unique among antimicrobials; they act primarily to inhibit bacterial DNA gyrase, an enzyme responsible for controlling the super coiling of bacterial DNA during replication. Resealing of the double standard helix is inhibited resulting in irreversible degradation of the chromosomal DNA. The fluoroquinolones also possess activity against bacteria in the stationary phase by an alteration of the permeability of the outer membrane phospholipid cell wall.

Susceptibility of selected canine pathogens (MIC) is as follows:
-*Pasteurella multocida*: 0.03 mg/L;
-*Escherichia coli*: 0.03 - 0.06 mg/L;
-*Staphylococcus pseudointermedius*: 0.125 mg/L;
-*Pseudomonas aeruginosa*: 2.0 mg/L.
Susceptibility breakpoints are: sensitive ≤ 0.5 mg/L; intermediate 1-2 mg/L; resistant ≥ 4 mg/L.

Bacterial resistance to fluoroquinolones most commonly occurs by alteration of the target, DNA-gyrase, *via* mutation. Less commonly mutation occurs at the topoisomerase-IV target. Other mechanisms of resistance occur when bacteria decrease the ability of the drug to enter the cell or increase active transport out of the cell. Resistance is usually chromosomally developed and, therefore, remains after antimicrobial therapy ends.Cross-resistance of enrofloxacin with other fluoroquinolones can occur. Changes in levels of resistance to fluoroquinolones over time by *Campylobacter* and *Salmonella* species are being monitored because of their possible impact on human health.

5.2 Pharmacokinetic particulars

The pharmacokinetics of enrofloxacin in dogs is such that oral and parenteral administration leads to similar serum levels.
Enrofloxacin is rapidly absorbed after oral, intramuscular and subcutaneous administration.
In the study conducted in dogs the dose of enrofloxacin administered was 4.91 mg /kg. The maximal plasma concentration was 1179.94 ± 260.83 ng/mL, Tmax was 1.57 ± 0.62 hours, half life 3.78 hours (harmonic mean) and AUC_{tot} value 4037 ± 1155.82 ngh/mL.
Approximately 40% of the oral or intravenous enrofloxacin dose administered in dogs is metabolised to ciprofloxacin.
The mean maximal concentration for ciprofloxacin reached 491.99 ± 57.95 ng/mL, tmax 1.79 ± 2.6 hours and the apparent terminal half life was 5.10 hours (harmonic mean). The mean AUC_{tot} for ciprofloxacin was 3737.21 ± 562.65 ngh/mL.
Enrofloxacin possesses a high distribution volume. Tissue levels 2 - 3 times higher than that found in the serum, have been demonstrated in laboratory animals and target species. Organs in which high levels can be expected are the lungs, liver, kidney, skin, bone and lymphatic system. Enrofloxacin also distributes into the cerebrospinal fluid, the aqueous humour and the foetus in pregnant animals.
The elimination of enrofloxacin is renal, primarily through glomerular filtration and tubular secretion.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Mannitol
Maize starch
Sodium starch glycolate (type A)
Meat flavour 10022
Sodium laurilsulphate
Basic butylated methacrylate copolymer
Dibutyl sebacate
Croscarmellose sodium
Silica, colloidal anhydrous
Talc
Magnesium stearate

6.2 Major incompatibilities

Not applicable.

6.3 Shelf-life

Shelf-life of the veterinary medicinal product as packaged for sale: 3 years
Return any halved tablet to the opened strip-pack and use within 24 hours.

6.4 Special precautions for storage

This veterinary medicinal product does not require any special storage conditions.

6.5 Nature and composition of immediate packaging

Polyamide/Aluminium/Polyvinyl chloride film (OPA/Al/PVC), heat sealed with aluminium foil containing 10 tablets / blister.
Each cardboard carton contains 100 tablets in 10 blister packs.
Polyamide/Aluminium/Polyvinyl chloride film (OPA/Al/PVC), heat sealed with aluminium foil containing 10 tablets / blister.
Each cardboard carton contains 10 tablets in 1 blister pack.

Not all pack sizes may be marketed.

6.6 Special precautions for the disposal of unused veterinary medicinal products or waste materials derived from the use of such products

Any unused veterinary medicinal product or waste materials derived from such veterinary medicinal products should be disposed of in accordance with local requirements.

7 MARKETING AUTHORISATION HOLDER

Krka, d.d., Novo mesto
Šmarješka cesta 6
8501 Novo mesto
Slovenia

8 MARKETING AUTHORISATION NUMBER(S)

VPA10774/001/003

9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Date of first authorisation: 12 June 2009
Date of last renewal: 12 June 2014

10 DATE OF REVISION OF THE TEXT

February 2021