

## **1. NAME OF THE VETERINARY MEDICINAL PRODUCT**

XEDEN 200 mg tablet for dogs

## **2. QUALITATIVE AND QUANTITATIVE COMPOSITION**

### **Active substance:**

One tablet contains:

Enrofloxacin..... 200.0 mg

For a full list of excipients, see section 6.1.

## **3. PHARMACEUTICAL FORM**

Tablet

Clover-shaped scored beige tablet

The tablet can be divided into four equal parts.

## **4. CLINICAL PARTICULARS**

### **4.1 Target species**

Dogs

### **4.2 Indications for use, specifying the target species**

In dogs:

- Treatment of lower urinary tract infections (associated or not with prostatitis) and upper urinary tract infections caused by *Escherichia Coli* or *Proteus mirabilis*.
- Treatment of superficial and deep pyoderma.

### **4.3 Contraindications**

Do not use in young or growing dogs (dogs aged less than 12 months (small breed) or less than 18 months (large breed)) as the product may cause epiphyseal cartilage alterations in growing puppies.

Do not use in dogs having seizure disorders, since enrofloxacin may cause CNS stimulation.

Do not use in dogs with known hypersensitivity to fluoroquinolones or to any of the excipients of the product.

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 use with tetracyclines, phenicols or macrolides because of potential antagonistic effects.

See also section 4.7.

### **4.4 Special warnings for each target species**

None

## **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.

Wherever possible, fluoroquinolones should be used based on susceptibility testing. Use of the product deviating from instructions given in the SPC may increase the prevalence of bacteria resistant to 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.

Use the product with caution in dogs with severe renal or hepatic impairment.

Pyoderma is mostly secondary to an underlying disease. It is advisable to determine the underlying cause and to treat the animal accordingly.

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

Persons with a known hypersensitivity to (fluoro)quinolones should avoid any contact with the product.

In case of accidental ingestion, seek medical advice immediately and show the package leaflet to the physician.

Wash hands after handling the product

In case of contact with eyes, rinse immediately with plenty of water.

## **4.6 Adverse reactions (frequency and seriousness)**

Possible joint cartilage alterations in growing puppies (see 4.3 contra-indications).  
In rare cases vomiting and anorexia are observed.

## **4.7 Use during pregnancy, lactation or lay**

Use during pregnancy: Laboratory studies in laboratory animals (rat, chinchilla) have not produced any evidence of a teratogenic, foetotoxic, maternotoxic effect. Use only according to the benefit/risk assessment by the responsible veterinarian.

Use during lactation: As enrofloxacin passes into the maternal milk, the use is not recommended during lactation.

## **4.8 Interaction with other medicinal products and other forms of interaction**

Concurrent use of flunixin should be under careful veterinary monitoring, as the interactions between these drugs may lead to adverse events related to delayed elimination.

Concomitant administration of theophylline requires careful monitoring as serum levels of theophylline may increase.

Concurrent use of magnesium or aluminum containing substances (such as antacids or sucralfate) may reduce absorption of enrofloxacin. These drugs should be administered two hours apart.

#### 4.9 Amounts to be administered and administration route

Oral use

5 mg of enrofloxacin/kg/day as a single daily dosing, i.e. one tablet for 40 kg daily for:

- 10 days in lower urinary tract infections
- 15 days in upper urinary tract infections and lower urinary tract infections associated with prostatitis
- Up to 21 days in superficial pyoderma depending on clinical response
- Up to 49 days in deep pyoderma depending on clinical response

The treatment should be reconsidered in case of lack of clinical improvement at half of the treatment duration.

XEDEN 50 mg Number of tablets per day	XEDEN 150 mg Number of tablets per day	XEDEN 200 mg Number of tablets per day	Dog weight (kg)
$\frac{1}{4}$			$\geq 2$ - < 4
$\frac{1}{2}$			$\geq 4$ - < 6.5
$\frac{3}{4}$	$\frac{1}{4}$		$\geq 6.5$ - < 8.5
1	$\frac{1}{4}$		$\geq 8.5$ - < 11
$1 \frac{1}{4}$	$\frac{1}{2}$		$\geq 11$ - < 13.5
$1 \frac{1}{2}$	$\frac{1}{2}$		$\geq 13.5$ - < 17
	$\frac{3}{4}$	$\frac{1}{2}$	$\geq 17$ - < 25
	1	$\frac{3}{4}$	$\geq 25$ - < 35
	$1 \frac{1}{4}$	1	$\geq 35$ - < 40
	$1 \frac{1}{2}$	1	$\geq 40$ - < 45
	$1 \frac{1}{2}$	$1 \frac{1}{4}$	$\geq 45$ - < 50
	$1 \frac{3}{4}$	$1 \frac{1}{4}$	$\geq 50$ - < 55
	2	$1 \frac{1}{2}$	$\geq 55$ - < 65
		$1 \frac{3}{4}$	$\geq 65$ - < 80

The tablets are flavoured, and are well accepted by dogs. The tablets may be administered directly in the mouth of the dog or simultaneously with food if necessary.

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

Overdosing can cause vomiting and nervous signs (muscle tremor, incoordination and convulsions) which may require treatment discontinuation.

In the absence of any known antidote, apply drug elimination methods and symptomatic treatment.

If necessary, administration of aluminium- or magnesium-containing antacids or activated carbon can be used to reduce absorption of enrofloxacin.

According to literature, signs of overdose with enrofloxacin in dogs such as inappetence and gastrointestinal disturbance were observed at approximately 10 times the recommended dose when administered for two weeks. No signs of intolerance were observed in dogs administered 5 times the recommended dose for a month.

#### 4.11 Withdrawal period(s)

Not applicable.

### 5. PHARMACOLOGICAL PROPERTIES

ATCvet code: QJ01MA90

Pharmacotherapeutic group: Fluoroquinolones

#### 5.1 Pharmacodynamic properties

Enrofloxacin is a synthetic fluoroquinolone antibiotic that exerts its activity by inhibiting topoisomerase II, an enzyme involved in the mechanism of bacterial replication.

Enrofloxacin exerts bactericidal activity concentration-dependant with similar values of minimal inhibit concentration and minimal bactericide concentrations. It also possesses activity against bacteria in the stationary phase by an alteration of the permeability of the outer membrane phospholipid cell wall.

In general, enrofloxacin exhibits good activity against most gram-negative bacteria, especially those of the Enterobacteriaceae. *Escherichia coli*, *Klebsiella spp.*, *Proteus spp.*, and *Enterobacter spp.* are generally susceptible.

*Pseudomonas aeruginosa* is variably susceptible and, when it is susceptible, usually has a higher MIC than other susceptible organisms.

*Staphylococcus aureus* and *Staphylococcus intermedius* usually are susceptible.

*Streptococci*, *enterococci*, anaerobic bacteria can generally be considered resistant.

Induction of resistance against quinolones can develop by mutations in the gyrase gene of bacteria and by changes in cell permeability towards quinolones.

#### 5.2 Pharmacokinetic particulars

Enrofloxacin is rapidly metabolised to form an active compound, ciprofloxacin.

After oral administration of XEDEN 200 (5 mg/kg) in dogs:

- The maximal plasma concentration of enrofloxacin of 1.72 µg/mL was observed one hour following administration.
- The maximal plasma concentration of ciprofloxacin (0.32 µg/mL) was observed two hours following administration.

Enrofloxacin is primarily excreted via the kidneys. A major portion of the parent drug and its metabolites is recovered in urine.

Enrofloxacin is widely distributed in the body. The tissue concentrations are often higher than the serum concentrations. Enrofloxacin crosses the blood-brain barrier. The degree of protein binding in serum is 14% in dogs. The half-life in serum is 3-5 hours in dogs (5 mg/kg). Approximately 60 % of the dose is excreted as unchanged enrofloxacin and the remainder as metabolites, amongst others ciprofloxacin. The total clearance is approximately 9 ml/minute/kg bodyweight in dogs.

#### Environmental properties

Not applicable

## **6. PHARMACEUTICAL PARTICULARS**

### **6.1 List of excipients**

Pig liver powder  
Yeast  
Cellulose microcrystalline  
Croscarmellose sodium  
Copovidone  
Silica colloidal anhydrous  
Hydrogenated castor oil  
Lactose monohydrate

### **6.2 Incompatibilities**

Not known.

### **6.3 Shelf life**

*Shelf-life of the veterinary medicinal product as packaged for sale:*

24 months

*Shelf-life of divisions of the tablets:*

3 days

### **6.4. Special precautions for storage**

Store in the original container

Protect from light

Divided tablets should be stored in the blister pack. Any divided tablet portions remaining after 3 days should be discarded.

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

### **6.5 Nature and composition of immediate packaging**

Blister complex: PVDC-TE-PVC/Aluminium heat sealed blisters with 6 tablets / blister

Cardboard box with 2 blisters of 6 tablets

Cardboard box with 20 blisters of 6 tablets

Not all pack sizes may be marketed.

### **6.6 Special precautions for the disposal of unused veterinary medicinal product 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**

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**8. MARKETING AUTHORISATION NUMBER**

Vm 20749/4020

**9. DATE OF FIRST AUTHORISATION**

12 October 2010

**10 DATE OF REVISION OF THE TEXT**

October 2010

**PROHIBITION OF SALE, SUPPLY AND/OR USE**

To be completed in accordance with national requirements.