

## **SUMMARY OF PRODUCT CHARACTERISTICS**

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

NorOtic Ear Drops, Suspension for Dogs  
Canor vet (DK, FI)  
Marbofloxacin/Clotrimazole/Dexamethasone Norbrook vet (SE)

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

1 ml contains:

#### **Active substances:**

Marbofloxacin .....3.0 mg  
Clotrimazole.....10.0 mg  
Dexamethasone .....0.9 mg  
(equivalent to dexamethasone acetate .....1.0 mg)

#### **Excipients**

Propyl gallate (E310)..... 1.0 mg

For the full list of excipients, see section 6.1.

### **3. PHARMACEUTICAL FORM**

Ear drops, suspension  
Homogenous beige to yellow oily suspension

### **4. CLINICAL PARTICULARS**

#### **4.1. Target species**

Dogs

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

Treatment of otitis externa of both bacterial and fungal origin respectively due to bacteria sensitive to marbofloxacin, and fungi especially *Malassezia pachydermatis* sensitive to clotrimazole.

The product should be used based on susceptibility testing of isolated bacteria.

### **4.3. Contraindications**

Do not use in dogs suffering from perforation of the tympanic membrane.  
Do not use in case of hypersensitivity to the active substances or to any of the excipients. See section 4.7.

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

The external ear canal should be meticulously cleaned and dried before treatment.

Bacterial and fungal otitis is often secondary in nature. The underlying cause should be identified and treated.

### **4.5. Special precautions for use**

#### Special precautions for use in animals

For external use only. Auricular use.

Avoid contact with eyes in animals. In case of accidental contact, rinse thoroughly with water.

Heavy reliance on a single class of antibiotic may result in the induction of resistance in a bacterial population. It is prudent to reserve the fluoroquinolones for the treatment of clinical conditions which have responded poorly, or are expected to respond poorly, to other classes of antibiotics.

Before treating with the product, the integrity of the tympanic membrane must be verified.

Official and local antimicrobial policies should be taken into account when the product is used.

See section 4.4

Quinolone class drugs have been associated with cartilage erosions in weight-bearing joints and other forms of arthropathy in immature animals of various species. The use of the product in young animals is not recommended.

#### Special precautions to be taken by the person administering the medicinal products to animals

Wash hands carefully after applying the product.

Avoid contact with eyes. In the event of accidental eye contact, rinse with clean water.

People with known hypersensitivity to fluoro(quinolones) and other compounds in the product should avoid contact with the veterinary medicinal product.

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

Usual adverse reactions associated with corticosteroid drugs may be observed (changes in biochemical and haematological parameters, such as increase of alkaline phosphatase, and of aminotransferase, some limited neutrophilia).

Prolonged and intensive use of topical corticosteroid preparations is known to trigger local and systemic effects, including suppression of adrenal function, thinning of the epidermis and delayed wound healing.

On rare occasions, the use of this product may be associated with deafness, mainly in elderly dogs and mostly of a transient nature.

#### **4.7. Use during pregnancy, lactation**

Do not administer to pregnant or lactating bitches.

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

None known

#### **4.9. Amount(s) to be administered and administration route**

Auricular use.

One drop of the preparation contains 71µg marbofloxacin, 237µg clotrimazole and 23.7µg dexamethasone acetate.

Shake well for 1 minute before use.

Apply ten drops into the ear once daily for 7 to 14 days.

After application, the base of the ear may be massaged briefly and gently to allow the preparation to penetrate to the lower part of the ear canal.

After 7 days of treatment, the veterinary surgeon should evaluate the necessity to extend the treatment another week.

When the product is intended for use in several dogs, use one cannula per dog.

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

Changes in biochemical and haematological parameters (such as increase of alkaline phosphatase, aminotransferase, some limited neutrophilia, eosinopenia, lymphopenia) are observed with three fold the recommended dosage; such changes are not serious and will reverse once the treatment has stopped.

#### 4.11. Withdrawal period(s)

Not applicable.

### 5. PHARMACOLOGICAL PROPERTIES

Pharmacotherapeutic group: corticosteroids and antiinfectives in combination  
ATC vet code: QS02CA06

#### 5.1. Pharmacodynamic properties

The preparation combines three active ingredients:

Marbofloxacin is a synthetic bactericidal agent belonging to the fluoroquinolone family that acts by inhibiting DNA gyrase. It exhibits a broad spectrum of activity against Gram-positive bacteria (e.g. *Staphylococcus intermedius*) and against Gram-negative organisms (*Pseudomonas aeruginosa*, *Escherichia coli* and *Proteus mirabilis*).

For Marbofloxacin:

European literature reports of microbiological susceptibility data (collected from 1994 – 2012) involving hundreds of canine and feline pathogens susceptible to marbofloxacin are outlined.

Microorganism	MIC (µg/ml)
<i>Staph pseudintermedius</i>	0.125-1
<i>Pseudomonas</i>	0.12-1

Susceptibility breakpoints have been determined as  $\leq 1$  µg/ml for sensitive, 2 µg/ml for intermediate and  $\geq 4$  µg/ml for resistant bacterial strains.

Marbofloxacin is not active against anaerobes, yeast or fungi. Resistance to fluoroquinolones occurs by chromosomal mutation with three mechanisms: decrease of the bacterial wall permeability, expression of efflux pump or mutation of enzymes responsible for molecule binding.

Clotrimazole is an anti-fungal agent that belongs to the imidazole family and which acts by causing changes in membrane permeability, allowing intracellular compounds to leak from the cell and thus inhibiting cellular molecular synthesis. It exhibits a wide spectrum of activity and is aimed, in particular, at *Malassezia pachydermatis*.

For Clotrimazole:

Susceptibility breakpoints have been determined as  $\leq 25$  µg/ml for sensitive fungal strains.

Dexamethasone acetate is a synthetic glucocorticoid exhibiting anti-inflammatory and anti-pruritic activity.

## **5.2. Pharmacokinetic particulars**

Pharmacokinetics studies in dogs at the therapeutic dosage have shown that: Marbofloxacin plasma concentrations peak at 0.06 µg/ml on the 14th day of treatment. Marbofloxacin bonds weakly to plasma proteins (< 10% in dogs) and is eliminated slowly, mainly in the active form, over 2/3 in urine and over 1/3 in faeces. Clotrimazole absorption is extremely poor (plasma concentration < 0.04 µg/ml). Dexamethasone acetate plasma concentration reaches 1.25 ng/ml on the 14<sup>th</sup> day of treatment. Dexamethasone resorption is not increased by the inflammatory process induced by otitis.

## **6. PHARMACEUTICAL PARTICULARS**

### **6.1. List of excipients**

Propyl gallate (E310)  
Sorbitan oleate  
Silica, hydrophobic colloidal  
Triglycerides, medium-chain

### **6.2. Incompatibilities**

Not applicable

### **6.3. Shelf-life**

Shelf life of the veterinary medicinal product as packaged for sale: 2 years.  
Shelf life after first opening the immediate packaging: 3 months.

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

Do not store above 30°C.

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

Details of the primary packaging:  
Low-density polyethylene bottle.  
Low-density polyethylene nozzle.  
Threaded high-density polyethylene cap.  
PVC cannula.

Presentation :

- Box containing 1 x 10 ml bottle and 2 cannulae
- Box containing 1 x 20 ml bottle and 2 cannulae
- Box containing 1 x 30 ml bottle and 2 cannulae

**6.6. Special precautions for the disposal of unused veterinary medicinal product or waste materials derived from the use of such products, if appropriate**

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

**7. MARKETING AUTHORISATION HOLDER**

Norbrook Laboratories Limited  
Station Works  
Camlough Road  
Newry  
Co. Down  
BT35 6JP  
Northern Ireland

**8. MARKETING AUTHORISATION NUMBER**

Vm 02000/4391

**9. DATE OF FIRST AUTHORISATION**

July 2015

**10. DATE OF REVISION OF THE TEXT**

July 2015

APPROVED *T. NASH* 21/07/15