SUMMARY OF PRODUCTS CHARACTERISTICS

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

Ornicure, 260 mg doxycycline powder for oral solution.

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Active ingredients	Per sachet
Doxycycline	260 mg
(as Doxycycline hyclate	300 mg)

For full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM

Powder for oral solution.
Fine, granulated, white to light yellow, odourless powder.

4. CLINICAL PARTICULARS

4.1 Target species

Racing pigeons and cage birds.

4.2 Indications for use, specifying the target species

Use for the treatment of
- infections of the respiratory tract
- ornithosis and psittacosis
- ocular infections caused by *Chlamydia psittaci* or *Mycoplasma* in pigeons and cage birds.

4.3 Contra-indications

None.

4.4 Special warnings for each target species

None.

4.5 Special precautions for use

i. Special precautions for use in animals

Administer the Ornicure solution fresh daily. Use deionised or distilled water to prepare the Ornicure solution.
Treated birds should not be allowed to drink from other sources during treatment.
In order to avoid poor absorption, water free from mineral salts and ferrous material should be used and no mineral salts, citric acid, dairy or ferrous products should be administered together with Ornicure.
Any medicated water which is not consumed within 24 hours should be discarded.
Also See Section 4.8. Interactions

ii. Special precautions for the person administering the veterinary medicinal product to animals

Do not handle this product if you are allergic to tetracyclines. Avoid contact with skin and eyes. Gloves should be worn whilst handling this product. If contact with skin or eyes occurs, wash area immediately with plenty of fresh water. If irritation persists or accidental ingestion occurs seek medical advice.
When handling the product, inhalation of the dust must be avoided by wearing a disposable half-mask respirator conforming to European Standard EN 149 (FFP2) or a nondisposable respirator to European Standard EN 140 with a filter to EN 143.
Wash hands after use.

iii. Other precautions

None

4.6 Adverse reactions (frequency and seriousness)

None

4.7 Use during pregnancy, lactation or lay

Ornicure is not for use during the breeding period, unless indicated by a veterinarian.

4.8 Interaction with other medicinal products and other forms of interaction

Simultaneous administration of grit or other calcium sources can influence the oral absorption of doxycycline. Also aluminium-, iron- and magnesium salts can lower the oral bioavailability of doxycycline.
The simultaneous administration of bactericidal antibiotics, such as penicillin and cefalosporins, with doxycycline should be avoided.
Gastrointestinal side-effects can occur at high dosages of doxycycline, but are not frequent.
Doxycycline is incompatible with alkaline substances. The stability of doxycycline decreases with increasing pH. The antimicrobial activity in vitro is reduced by 50% in the presence of riboflavine.

4.9 Amount(s) to be administered and administration route

The dosage of doxycycline hyclate in birds is 15 mg/kg bodyweight daily. Dissolve 1 sachet in 2 litres of deionised or distilled water for pigeons and cage birds. For birds with low daily water intake, such as parkeets, 1 sachet of Ornicure has to be dissolved in 0,5 litre of deionised or distilled water.
The intake of medicated water depends on the clinical condition of the animals. In order to obtain the correct dosage, the concentration of tetracycline has to be adjusted accordingly.
An Ornicure treatment normally lasts 5 days. In case of severe infections, the treatment should be prolonged.
During the racing season, Ornicure can be used prophylactically during 2 consecutive days out of 7 weekly.

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

Doxycycline has a good margin of safety.

4.11 Withdrawal period(s)

Not to be used in pigeons and cage birds intended for human consumption.

5. PHARMACOLOGICAL PROPERTIES

Pharmacotherapeutic group:

antibiotics, tetracyclines.

ATC Vet Code:

QJ01AA02

5.1 Pharmacodynamic properties

Doxycycline is a semi-synthetic broad spectrum antibiotic from the group of the tetracyclines. Ornicure contains the hyclate of alpha-6-deoxy-5-oxytetracycline (doxycycline). In this form, doxycycline is water soluble.
Doxycycline has a bacteriostatic activity and acts by an inhibition of the protein synthesis. Doxycycline enters the bacteria via a passive diffusion through the outer cell membrane. Via active transport, this tetracycline passes through the inner cytoplasmatic membrane. This active transport system is not present in the host cell. Doxycycline binds to the messenger RNA of the ribosomes. This binding, however, is reversible. The working mechanism of doxycycline is similar to that of the other tetracyclines. It has a higher activity against sensitive organisms than the other tetracyclines.
The doxycycline molecule has an amphoteric character and shows the highest activity at a pH of about 6. It is highly lipid soluble and therefore penetrates easily into the tissues. Doxycycline is active against a broad range of gram-positive and gram-negative bacteria, rickettsia, chlamydia, mycoplasms and even some protozoa. Contrary to other tetracyclines, doxycycline is also active against anaerobic organisms, but does not show any activity against organisms such as *Proteus*, *Pseudomonas*, and *Brucella*.
The MIC of doxycycline is low for some frequently occurring pathogenic organisms in pigeons and cage birds, such as *Pasteurella*, *Staphylococcus* sp. and *Chlamydia*.
Doxycycline, however, shows less activity against most of the enterobacteriaceae.

5.2 Pharmacokinetic particulars

Absorption
The bioavailability of doxycycline in pigeons is high following administration via the drinking-water. Even administration as calcium chelate complex results in a complete absorption. Absorption of doxycycline in pigeons mainly takes place in the duodenum. The citric acid/sodium citrate buffer is added to Ornicure in order to establish a mild acid pH in the drinking-water and to avoid binding of the bivalent ions in the drinking-water to doxycycline. In the case of doxycycline, however, the binding to bivalent or trivalent ions is considerably lower. Following oral administration of Ornicure (doxycycline hyclate) to pigeons, no notable decrease in the intake of drinking-water is seen. With Ornicure, concentrations higher than 0.5 µg/ml were measured at 2 hours following oral administration via the drinking-water. During the following hours, the doxycycline concentrations still increased and maximal plasma levels were attained in treated birds, ranging from 0.8 to 1.6 µg/ml.

Distribution
For tetracyclines in general, the distribution volume is found to be considerably higher than the body fluid. Following the intravenous administration of doxycycline in pigeons, a high distribution volume of 2.7 l/kg was calculated. This indicates a high degree of penetration of the antibiotic into the tissues. This was confirmed by the determination of tissue concentrations of doxycycline in the pigeon. For all organs tested and soft tissues, excluding fat and skin, considerably higher concentrations were found compared with the serum levels.
These high tissue concentrations of doxycycline in pigeons allow the establishment of high therapeutic effective tissue levels with relatively low dosages.

Metabolism and elimination
Doxycycline is excreted via the intestine in pigeons, as it is in mammals. A substantial part, however, is again reasorbed from the gastro-intestinal tract. This is the so-called entero-hepatic loop. Another part of the excreted antibiotic is bound to the gastro-intestinal content. So, mostly, stable complexes are formed. This chelate formation prevents the medicine from being reasorbed again and makes it bacteriologically inactive. The presence of calcium- and magnesium salts in the intestine strongly influences the elimination of the antibiotic. It has been demonstrated that following parenteral administration, together with grit in the feed, the elimination of doxycycline is faster than in the case no grit was provided. Following intravenous administration of doxycycline together with oral grit administration, a half-life of about 8 hours was calculated. The absence of grit in the feed increased the elimination half-life to about 12 hours in pigeons.
For ORNICURE, the elimination half-life following oral administration varied from 16 to 22 hours.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Citric Acid Monohydrate
Sadium Citrate Dihydrate
Povidone K30
Lacotose Monohydrate

6.2 Incompatibilities

Doxycycline is incompatible with alkaline substances. The stability of doxycycline decreases with increasing pH (Regosz, 1976).

6.3 Shelf life

Shelf life of the veterinary medicinal product as packaged for sale: 5 years.
Shelf life after dilution or reconstitution according to directions: 24 hours.

6.4 Special precautions for storage

No special storage precautions necessary.
Any medicated water which is not consumed within 24 hours should be discarded.

6.5 Nature and composition of immediate packaging

A cardboard box containing 8 or 24x4 g laminated heat sealed polyethylene/aluminium/polyethylene/paper sachets.
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, if appropriate

Any unused veterinary medicinal product or waste materials derived from such veterinary medicinal products should be disposed of in accordance with local requirements. Unused medicated water should be disposed of by pouring onto excreta in the loft. Excreta from treated birds should not be spread onto land used for growing crops.

7 MARKETING AUTHORISATION HOLDER

Oropharma n.v.
70 Kapellestraat
BE-9800 Deinze

8. MARKETING AUTHORISATION NUMBER

Vm 13058/4001

9. DATE OF FIRST AUTHORISATION

Date: 14th August 1997

10. DATE OF REVISION OF THE TEXT

Date: 22nd October 2008