

**ANNEX I**  
**SUMMARY OF PRODUCT CHARACTERISTICS**

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

Therios 300 mg palatable tablets for dogs (UK, AT, IE, PL, CZ, BE, HU, GK, LUX, NL, PT)  
Therios 300 mg flavoured tablets for dogs (IT, ES)  
Therios 300 mg aromatisierte Tabletten für Hunde (DE)  
Therios 300 mg tablets for dogs (DK, FI, SE)

**2. QUALITATIVE AND QUANTITATIVE COMPOSITION**

**Active substance:**

Each tablet contains:

Cefalexin (as cefalexin monohydrate).....300 mg

Excipients:

<b><u>Qualitative composition of excipients and other constituents</u></b>
Croscarmellose sodium
Silica, colloidal anhydrous
Magnesium stearate
Yeast dried
Biscuit flavour F07012
Ammonium glycyrrhizate
Macrogol 6000

Round scored beige palatable tablet.

The tablet can be divided into halves and quarters.

**3. CLINICAL INFORMATION**

**3.1 Target species**

Dogs.

**3.2 Indications for use for each target species**

For the treatment of bacterial skin infections in dogs (including deep and superficial pyoderma) caused by organisms sensitive to cefalexin.

For the treatment of urinary tract infections in dogs (including nephritis and cystitis) caused by organisms sensitive to cefalexin.

**3.3 Contraindications**

Do not use in cases of hypersensitivity to penicillins, cephalosporins or to any of the excipients.  
Do not use in case of severe renal failure.

Do not use in rabbits, guinea pigs, hamsters and gerbils.

### **3.4 Special warnings**

None.

### **3.5 Special precautions for use**

#### Special precautions for safe use in the target species:

Whenever possible, the use of the veterinary medicinal product should be based on susceptibility testing and take into account official and local antimicrobial policies.

As with other antibiotics which are excreted mainly by the kidneys, systemic accumulation may occur when renal function is impaired. In case of known renal insufficiency the dose should be reduced.

The veterinary medicinal product is not recommended for use in dogs less than 2.5 kg bodyweight.

Use of the veterinary medicinal product deviating from the instructions given in the SPC may increase the prevalence of bacteria resistant to cefalexin and may decrease the effectiveness of treatment with other beta-lactam antibiotics due to the potential for cross-resistance.

Safety of the excipient, ammonium glycyrrhizate, has not been established in dogs less than 1 year old.

#### Special precautions to be taken by the person administering the veterinary medicinal product to animals:

Cephalosporins may cause sensitisation (allergy) following injection, inhalation, ingestion or skin contact. Sensitivity to penicillins may lead to cross sensitivity to cephalosporin and vice versa. Allergic reactions to these substances may occasionally be serious.

1. People with known hypersensitivity to cephalosporins should avoid contact with the veterinary medicinal product.
2. Handle this veterinary medicinal product with great care to avoid exposure, taking all recommended precautions. Wash hands after use.
3. If you develop symptoms following exposure such as skin rash you should seek medical advice and show the doctor this warning. Swellings of the face, lips or eyes or difficulty breathing are more serious symptoms and require urgent medical attention.

In case of accidental ingestion, particularly by a child, seek medical advice immediately and show the package leaflet or the label to the physician.

#### Special precautions for the protection of the environment:

Not applicable.

### **3.6 Adverse events**

Dogs:

Rare (1 to 10 animals / 10,000 animals treated):	Hypersensitivity reaction
Undetermined frequency (cannot be estimated from the available data):	Vomiting, Diarrhoea

Reporting adverse events is important. It allows continuous safety monitoring of a veterinary medicinal product. Reports should be sent, preferably via a veterinarian, to either the marketing authorisation holder or the national competent authority via the national reporting system. See the package leaflet for respective contact details.

**3.7 Use during pregnancy, lactation or lay**

Pregnancy and lactation:

Do not use during pregnancy and lactation.

**3.8 Interaction with other medicinal products and other forms of interaction**

In order to ensure efficacy, the veterinary medicinal product should not be used in combination with bacteriostatic antibiotics.

Concurrent use of first generation cephalosporins with aminoglycoside antibiotics or some diuretics such as furosemide can enhance nephrotoxicity risks.

**3.9 Administration routes and dosage**

Oral use.

15 mg cefalexin per kg bodyweight twice daily (equivalent to 30 mg per kg bodyweight per day) for duration of:

- 14 days in cases of urinary tract infection.
- At least 15 days in cases of superficial infectious dermatitis.
- At least 28 days in cases of deep infectious dermatitis.

In severe or acute conditions, the dose may be safely doubled to 30 mg/kg twice daily.

To allow for accuracy of dosing, tablets can be halved or quartered.

Any increase in the dose or duration of treatment should be according to a risk/benefit assessment by the prescribing veterinarian.

To ensure a correct dosage, bodyweight should be determined as accurately as possible.

The veterinary medicinal product is well accepted by dogs but may be crushed or added to a small quantity of food immediately prior to feeding if necessary.

### **3.10 Symptoms of overdose (and where applicable, emergency procedures and antidotes)**

Trials performed on animals with up to 5 times the recommended twice daily dosage of 15 mg/kg demonstrated that cefalexin was well tolerated.

### **3.11. Special restrictions for use and special conditions for use, including restrictions on the use of antimicrobial and antiparasitic veterinary medicinal products in order to limit the risk of development of resistance**

Not applicable.

### **3.12 Withdrawal periods**

Not applicable.

## **4. PHARMACOLOGICAL INFORMATION**

### **4.1 ATCvet code:**

QJ01DB01

Cefalexin monohydrate, the active ingredient of the Therios tablets, is a bactericidal antibiotic of the cephalosporin family, obtained by hemi-synthesis of the 7 amino-cephalosporanic nucleus.

### **4.2 Pharmacodynamics**

Cefalexin acts by inhibiting the nucleopeptide synthesis of the bacterial wall. Cephalosporins interfere with transpeptidation by acylating the enzyme making it unable to cross-link muramic acid-containing peptidoglycan strands. The inhibition of the biosynthesis of the material required to build the cell wall results in a defective cell wall and consequently osmotically unstable to protoplasts. The combined action results in cell lysis and filament formation.

Cefalexin is active against Gram positive pathogens such as *Streptococcus* spp. and *Staphylococcus* spp. (including penicillin-resistant strains) and Gram negative pathogens such as *Proteus mirabilis* and some strains of *Escherichia coli* and *Klebsiella* spp.

Cefalexin is active against Methicillin-susceptible staphylococci including penicillin-resistant strains not against Methicillin-resistant staphylococci.

Cefalexin is active against most beta-lactamase-producing Gram positive bacteria and has moderate activity against certain non-transferable (chromosomal) beta-lactamase-producing Gram negative Enterobacteriaceae and fastidious Gram negatives.

Resistance is plasmid-mediated or transmitted by chromosomal route.

Cefalexin has a time-dependent bactericidal activity against *Staphylococcus* spp. and *Pasteurella multocida*.

CLSI cefalexin veterinary breakpoints are available for dogs in *Staphylococcus aureus*, *Staphylococcus pseudintermedius*, Streptococci- $\beta$ -hemolytic group and *Escherichia coli* in skin and soft tissue infections. (CLSI, July 2013).

- Susceptible:  $\leq 2 \mu\text{g/mL}$
- Resistant:  $\geq 8 \mu\text{g/mL}$

Resistance to cefalexin may be due to one of the following mechanisms of resistance. Firstly, the production of various beta-lactamases (cephalosporinase), that inactivate the antibiotic, is the most prevalent mechanism among gram-negative bacteria. Secondly, a decreased affinity of the PBPs (penicillin-binding proteins) for beta-lactam drugs is frequently involved for beta -lactam resistant gram-positive bacteria. Lastly, efflux pumps, extruding the antibiotic from the bacterial cell, and structural changes in porins, reducing passive diffusion of the drug through the cell wall, may contribute to improve the resistant phenotype of a bacterium.

Well-known cross-resistance (involving the same resistance mechanism) exists between antibiotics belonging to the beta -lactam group due to structural similarities. It occurs with  $\beta$ -lactamases enzymes, structural changes in porins or variations in efflux pumps. Co-resistance (different resistance mechanisms involved) has been described in *E. coli* due to a plasmid harbouring various resistance genes.

### 4.3 Pharmacokinetics

After single oral administration of the recommended dosage of 15 mg cefalexin per kg bodyweight to Beagle dogs, plasma concentrations were observed within 30 minutes. The plasma peak was observed at 1.33 hours with a plasma concentration of 21.2  $\mu\text{g/ml}$ . The bioavailability of the active was over 90 %. Cefalexin was detected until 24 hours after the administration. The first urine specimen was collected within 2 to 12 hours with peak concentrations of cefalexin measured at 430 to 2758  $\mu\text{g} / \text{ml}$  within 12 hours.

After repeated oral administration of the same dosage, twice a day for 7 days, plasma peaks occurred 2 hours later with a concentration of 20  $\mu\text{g/ml}$ . Over the treatment period concentrations were maintained above 1  $\mu\text{g/ml}$ . The mean elimination half-life is 2 hours. Skin levels were around 5.8 to 6.6  $\mu\text{g} / \text{g}$  2 hours after treatment.

## 5. PHARMACEUTICAL PARTICULARS

### **5.1 Major incompatibilities**

Not applicable.

### **5.2 Shelf life**

Shelf-life of the veterinary medicinal product as packaged for sale: 3 years.

Shelf-life after first opening the immediate packaging: 48 hours.

Any divided tablet portions remaining after 48 hours should be discarded.

### **5.3 Special precautions for storage**

Do not store above 25 °C.

Divided tablets should be stored in the blister pack.

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

Polyvinylchloride blister heat sealed with an aluminium cover foil.

#### Pack sizes:

Cardboard box with 1 blister of 10 tablets.

Cardboard box with 20 blisters of 10 tablets.

Not all pack sizes may be marketed.

### **5.5 Special precautions for the disposal of unused veterinary medicinal product or waste materials derived from the use of such products**

Medicines should not be disposed of via wastewater or household waste.

Use take-back schemes for the disposal of any unused veterinary medicinal product or waste materials derived thereof in accordance with local requirements and with any national collection systems applicable to the veterinary medicinal product concerned.

## **6. NAME OF THE MARKETING AUTHORISATION HOLDER**

{Name}

## **7. MARKETING AUTHORISATION NUMBER(S)**

## **8. DATE OF FIRST AUTHORISATION**

Date of first authorisation: {DD/MM/YYYY}

**9. DATE OF THE LAST REVISION OF THE SUMMARY OF THE PRODUCT CHARACTERISTICS**

{mm/yyyy}

**10. CLASSIFICATION OF VETERINARY MEDICINAL PRODUCTS**

Veterinary medicinal product subject to prescription.

Detailed information on this veterinary medicinal product is available in the Union Product Database.

(<https://medicines.health.europa.eu/veterinary>)

**ANNEX II**  
**LABELLING AND PACKAGE LEAFLET**

**PARTICULARS TO APPEAR ON THE OUTER PACKAGE**

Cardboard box containing 10 or 200 tablets

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

Therios 300 mg palatable tablets (UK, AT, IE, PL, CZ, BE, HU, GK, LUX, NL, PT)

Therios 300 mg flavoured tablets (IT, ES)

Therios 300 mg aromatisierte Tabletten (DE)

Therios 300 mg tablets (DK, FI, SE)

**2. STATEMENT OF ACTIVE SUBSTANCES**

Each tablet contains:

Cefalexin (as cefalexin monohydrate).....300 mg

**3. PACKAGE SIZE**

10 tablets

200 tablets

**4. TARGET SPECIES**

Dogs.

**5. INDICATIONS**

**6. ROUTE(S) OF ADMINISTRATION**

Oral use.

**7. WITHDRAWAL PERIODS**

**8. EXPIRY DATE**

Exp. {mm/yyyy}

**9. SPECIAL STORAGE PRECAUTIONS**

Do not store above 25°C.

Divided tablets should be stored in the blister pack. Any divided tablet portions remaining after 48 hours should be discarded.

**10. THE WORDS “READ THE PACKAGE LEAFLET BEFORE USE”**

Read the package leaflet before use.

User Warnings

Penicillins and cephalosporins may occasionally cause severe allergic reactions.

Read the package leaflet before use.

**11. THE WORDS “FOR ANIMAL TREATMENT ONLY”**

For animal treatment only.

**12. THE WORDS “KEEP OUT OF THE SIGHT AND REACH OF CHILDREN”**

Keep out of the sight and reach of children.

**13. NAME OF THE MARKETING AUTHORISATION HOLDER**



**14. MARKETING AUTHORISATION NUMBER(S)**

**15. BATCH NUMBER**

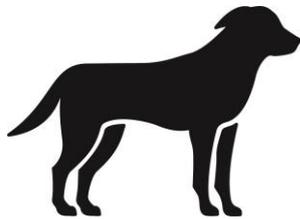
Lot {number}

**MINIMUM PARTICULARS TO APPEAR ON SMALL IMMEDIATE PACKAGING UNITS**

{Blister}

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

Therios



**2. QUANTITATIVE PARTICULARS OF THE ACTIVE SUBSTANCE**

cefalexin 300 mg/tablet

**3. BATCH NUMBER**

Lot {number}

**4. EXPIRY DATE**

Exp. {mm/yyyy}

## PACKAGE LEAFLET

### 1. Name of the veterinary medicinal product

Therios 300 mg palatable tablets for dogs (UK, AT, IE, PL, CZ, BE, HU, GK, LUX, NL, PT)

Therios 300 mg flavoured tablets for dogs (IT, ES)

Therios 300 mg aromatisierte Tabletten für Hunde (DE)

Therios 300 mg tablets for dogs (DK, FI, SE)

Therios 750 mg palatable tablets for dogs (UK, AT, IE, PL, CZ, BE, HU, GK, LUX, NL, PT)

Therios 750 mg flavoured tablets for dogs (IT, ES)

Therios 750 mg aromatisierte Tabletten für Hunde (DE)

Therios 750 mg tablets for dogs (DK, FI, NO, SE)

### 2. Composition

THERIOS 300

Each tablet contains:

Cefalexin (as cefalexin monohydrate).....300 mg

THERIOS 750

Each tablet contains:

Cefalexin (as cefalexin monohydrate).....750 mg

Round scored beige palatable tablet

The tablet can be divided into halves and quarters.

### 3. Target species

Dogs.



### 4. Indications for use

For the treatment of bacterial skin infections in dogs (including deep and superficial pyoderma) caused by organisms sensitive to cefalexin.

For the treatment of urinary tract infections in dogs (including nephritis and cystitis) caused by organisms sensitive to cefalexin.

## 5. Contraindications

Do not use in cases of hypersensitivity to penicillins, cephalosporins or to any of the excipients.

Do not use in case of severe renal failure.

Do not use in rabbits, guinea pigs, hamsters and gerbils.

## 6. Special warnings

Special precautions for safe use in the target species:

Wherever possible, the **use of the veterinary medicinal product should be based on susceptibility testing and take into account official and local antimicrobial policies.**

As with other antibiotics which are excreted mainly by the kidneys, systemic accumulation may occur when renal function is impaired. In case of known renal insufficiency the dose should be reduced.

Use of the veterinary medicinal product deviating from the instructions given in the SPC may increase the prevalence of bacteria resistant to cefalexin and may decrease the effectiveness of treatment with other beta-lactam antibiotics due to the potential for cross-resistance.

Safety of the excipient, ammonium glycyrrhizate, has not been established in dogs less than 1 year old.

The veterinary medicinal product is not recommended for use in dogs less than 2.5 kg bodyweight for THERIOS 300 and 6 kg bodyweight for THERIOS 750.

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

Cephalosporins may cause sensitisation (allergy) following injection, inhalation, ingestion or skin contact. Sensitivity to penicillins may lead to cross sensitivity to cephalosporin and vice versa. Allergic reactions to these substances may occasionally be serious.

1. People with known hypersensitivity to cephalosporins should avoid contact with the veterinary medicinal product.

2. Handle this veterinary medicinal product with great care to avoid exposure, taking all recommended precautions. Wash hands after use.

3. If you develop symptoms following exposure such as skin rash you should seek medical advice and show the doctor this warning. Swellings of the face, lips or eyes or difficulty breathing are more serious symptoms and require urgent medical attention.

In case of accidental ingestion, particularly by a child, seek medical advice immediately and show the package leaflet or the label to the physician.

Use during pregnancy, lactation or lay:

Do not use during pregnancy and lactation.

Interaction with other medicinal products and other forms of interaction:

In order to ensure efficacy, the veterinary medicinal product should not be used in combination with bacteriostatic antibiotics.

Concurrent use of first generation cephalosporins with aminoglycoside antibiotics or some diuretics such as furosemide can enhance nephrotoxicity risks

Overdose:

Trials performed on animals with up to 5 times the recommended dosage 15 mg/kg demonstrated that cefalexin was well tolerated.

**7. Adverse events**

Dogs:

Rare (1 to 10 animals / 10,000 animals treated):
Hypersensitivity reaction
Undetermined frequency (cannot be estimated from the available data):
Vomiting, Diarrhoea

Reporting adverse events is important. It allows continuous safety monitoring of a veterinary medicinal product. If you notice any side effects, even those not already listed in this package leaflet, or you think that the medicine has not worked, please contact, in the first instance, your veterinarian. You can also report any adverse events to the marketing authorisation holder using the contact details at the end of this leaflet, or via your national reporting system.

**8. Dosage for each species, routes and method of administration**

Oral use.

15 mg cefalexin per kg bodyweight twice daily (equivalent to 30 mg per kg bodyweight per day) for duration of:

- 14 days in cases of urinary tract infection
- At least 15 days in cases of superficial infectious dermatitis
- At least 28 days in cases of deep infectious dermatitis

In severe or acute conditions the dose may be safely doubled to 30 mg/kg twice daily. To allow for accuracy of dosing, tablets can be halved or quartered.

Any increase in the dose or duration of treatment should be according to a risk/benefit assessment by the prescribing veterinarian.

To ensure a correct dosage bodyweight should be determined as accurately as possible.

#### **9. Advice on correct administration**

The veterinary medicinal product tablets are well accepted by dogs but may be crushed or added to a small quantity of food immediately prior to feeding if necessary.

#### **10. Withdrawal periods**

Not applicable.

#### **11. Special storage precautions**

Keep out of the sight and reach of children.

Do not store above 25°C.

Keep the blister in the outer carton.

Shelf-life after first opening the immediate packaging: 48 hours

Divided tablets should be stored in the blister pack. Any divided tablet portions remaining after 48 hours should be discarded.

Do not use the veterinary medicinal product after the expiry date stated on the blister and outer carton after Exp. The expiry date refers to the last day of that month.

#### **12. Special precautions for disposal**

Medicines should not be disposed of via wastewater or household waste.

Use take-back schemes for the disposal of any unused veterinary medicinal product or waste materials derived thereof in accordance with local requirements and with any applicable national collection systems. These measures should help to protect the environment.

Ask your veterinary surgeon or pharmacist how to dispose of medicines no longer required.

#### **13. Classification of veterinary medicinal products**

Veterinary medicinal product subject to prescription.

Detailed information on this veterinary medicinal product is available in the Union Product Database.

#### **14. Marketing authorization numbers and pack sizes**

##### Pack sizes:

Cardboard box with 1 blister of 10 tablets

Cardboard box with 20 blisters of 10 tablets

Cardboard box with 3 blisters of 10 tablets (Therios 750 mg palatable tablets for dogs only)

Not all pack sizes may be marketed.

**15. Date on which the package leaflet was last revised**

{ mm/yyyy }

Detailed information on this veterinary medicinal product is available in the Union Product Database.

(<https://medicines.health.europa.eu/veterinary>).

**16. Contact details**

Marketing authorisation holder and contact details to report suspected adverse reactions:

*(Name and address to be completed nationally)*

Tel: +800 35 22 11 51

Email: [pharmacovigilance@ceva.com](mailto:pharmacovigilance@ceva.com)

Manufacturer responsible for batch release:

Ceva Santé Animale

Boulevard de la Communication

Zone Autoroutière

53950 Louverné

France

**17. Other information**