

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

## 1. NAME OF THE VETERINARY MEDICINAL PRODUCT

Rilexine DC 375 mg intramammary suspension for dry cows [FR, AT, BE, BG, CZ, DE, EE, HR, HU, IE, IT, LT, LV, NL, PL, PT, RO, SK, SI, UK(NI)]

Rilexine secado 375 mg intramammary suspension for dry cows [ES]

Cefalexin Virbac 375 mg intramammary suspension for dry cows [DK]

Cefalexin Virbac vet 375 mg intramammary suspension for dry cows [FI]

## 2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each 8 g intramammary syringe contains:

### Active substance:

Cefalexin 375 mg (equivalent to 500 mg of cefalexin benzathine)

### Excipients:

Qualitative composition of excipients and other constituents
Aluminium stearate
Paraffin, white soft
Paraffin, light liquid

White to yellowish oily suspension.

## 3. CLINICAL INFORMATION

### 3.1 Target species

Cattle (dry cows).

### 3.2 Indications for use for each target species

For the treatment of subclinical mastitis at dry-off and prevention of new intramammary infections occurring during the dry period, caused by *Staphylococcus aureus*, *Streptococcus dysgalactiae* and *Streptococcus uberis*.

### 3.3 Contraindications

Do not use in cases of hypersensitivity to cephalosporins, other  $\beta$ -lactam antibiotics or to any of the excipients.

### 3.4 Special warnings

Cross resistance occurs with other  $\beta$ -lactams.

### 3.5 Special precautions for use

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

Use of the veterinary medicinal product should be based on identification and susceptibility testing of the target pathogen(s). If this is not possible, therapy should be based on epidemiological information and knowledge of susceptibility of the target bacteria at farm level, or at local/regional level.

Use of the veterinary medicinal product should be in accordance with official, national and regional antimicrobial policies.

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.

The rules of asepsis must be scrupulously followed during the administration of the veterinary medicinal product. The efficacy of the veterinary medicinal product has only been established against the pathogens mentioned in section 3.2. Consequently, serious acute mastitis (potentially fatal) due to other pathogen species, mainly *Pseudomonas aeruginosa*, can occur after the drying off.

Appropriate veterinary and husbandry measures including good hygienic practices should be taken to reduce that risk. Cows should be housed in a hygienic paddock located apart from the milking parlour. Cows should be regularly checked several days after drying off.

The feeding of waste milk containing residues of cefalexin to calves should be avoided up to the end of the milk withdrawal period (except during the colostrum phase), because it could select antimicrobial-resistant bacteria within the intestinal microbiota of the calf and increase the faecal shedding of these bacteria.

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

Penicillins and cephalosporins may cause hypersensitivity (allergy) following injection, inhalation, ingestion or skin contact. Hypersensitivity to penicillins may lead to cross-reactions to cephalosporins and vice versa. Allergic reaction to these substances may occasionally be serious.

People with known hypersensitivity to penicillins or cephalosporins, or who have been advised not to work with penicillin or cephalosporin preparations, should avoid contact with the veterinary medicinal product.

Handle this veterinary medicinal product with great care to avoid exposure. Wear gloves during administration of the veterinary medicinal product and wash hands after use.

In case of accidental contact with skin or eyes, wash immediately with clean water.

If you develop symptoms following exposure, such as a skin rash, seek medical advice immediately and show the package leaflet or the label to the physician. Swelling of the face, lips or eyes or difficulty with breathing are more serious symptoms and require urgent medical attention.

Those developing a reaction after contact with the veterinary medicinal product should avoid handling the product (and other cephalosporin and penicillin containing products) in future.

The cleaning towels supplied with the veterinary medicinal product contain isopropyl alcohol, which may cause skin or eye irritation in some people. The wearing of gloves is recommended during the administration of the veterinary medicinal product and when handling the cleaning towels.

Special precautions for the protection of the environment:

Not applicable.

### **3.6 Adverse events**

Cattle (dry cows):

Rare (1 to 10 animals / 10,000 animals	Allergic reaction <sup>1</sup> (Agitation, Trembling, Mammary gland oedema, Swollen eyelid, Swollen lip)
--	--

treated):	
-----------	--

<sup>1</sup> Immediate, can lead to death in certain animals.

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 its local representative 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:

The veterinary medicinal product is intended for use during pregnancy. The safety of the veterinary medicinal product has not been established during pregnancy in specific target animal safety studies.

However, no adverse effects on the foetus were observed in the clinical trial. Moreover, as the quantities of cephalexin absorbed by the intramammary route are low, the use of this medication during pregnancy does not present any particular problem.

#### Lactation:

Do not use during lactation of lactating dairy cows.

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

The safety of concomitant use of the veterinary medicinal product and other intramammary products has not been established, simultaneous use is discouraged.

Do not use simultaneously with bacteriostatic antibiotics.

### **3.9 Administration routes and dosage**

Intramammary use.

375 mg of cephalexin (equivalent to 500 mg of cephalexin benzathine) i.e. the content of one syringe should be infused one into each quarter via the teat canal immediately after the last milking of the lactation.

Milk out thoroughly before starting administration. Before administering the veterinary medicinal product, the teats should be thoroughly cleaned and disinfected using the provided cleaning towel, and care should be taken to avoid contamination of the syringe nozzle. Administer the full content of a syringe in each quarter. Massage after administration. After administration it is recommended to immerse the teat in an approved disinfectant bath. Do not milk after treatment.

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

See section 3.6.

### **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**

### **3.12 Withdrawal periods**

Meat and offal: 4 days

Milk:

- 12 hours after calving when dry period is more than 42 days
- 42.5 days after treatment when dry period is 42 days or less

## **4. PHARMACOLOGICAL INFORMATION**

### **4.1 ATC vet code: QJ51DB01**

### **4.2 Pharmacodynamics**

Cefalexin is an antibacterial belonging to the group of  $\beta$ -lactam antibiotics, and is structurally analogous to and has similar mode of action to penicillins. It belongs to the first generation of cephalosporins.

The  $\beta$ -lactam antibiotics prevent the synthesis of the bacterial cell wall by inhibition of transpeptidase and carboxypeptidase enzymes, causing an osmotic imbalance that destroys growing bacteria. Cefalexin is active against gram-positive bacteria such as *Staphylococcus aureus* (including  $\beta$ -lactamase-producing strains), other staphylococci which do or do not produce penicillinases, and *Streptococcus* spp., including *S. uberis* and *S. dysgalactiae*.

Critical concentrations (cutting points or breakpoints) sensitivity (S) and resistance (R), in  $\mu\text{g/ml}$ , for first generation cephalosporins (CLSI, 2013): Susceptible:  $\leq 8$ , Intermediate: 16 and Resistant:  $\geq 32$ . The main mechanisms of resistance against  $\beta$ -lactams are the production of enzymes ( $\beta$ -lactamases) that inactivate the drug, the alteration of penicillin-binding proteins and the alteration of the permeability of the bacterial outer membrane. Cephalosporins are generally not sensitive to the action of  $\beta$ -lactamases.

There is a cross-resistance (involving the same resistance mechanism) between antibiotics of the  $\beta$ -lactam group due to structural similarities. It occurs with  $\beta$ -lactamase enzymes, structural changes in porins, or changes in efflux pumps. Co-resistance (involving different resistance mechanisms) has been described in *E. coli* due to the fact that a plasmid carries various genes encoding resistance.

### **4.3 Pharmacokinetics**

Cefalexin has excellent tissue diffusion and its tissular half-life is considerably longer than its plasma half-life. The elimination of cefalexin occurs mainly (85%) through the urine in its active form. The urinary concentration peaks are much higher than the plasma concentration peaks.

## **5. PHARMACEUTICAL PARTICULARS**

### **5.1 Major incompatibilities**

Not applicable.

### **5.2 Shelf life**

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

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

Do not store above 25 °C.

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

Low-density polyethylene intramammary syringe.

Box of 12 x 8g intramammary syringes and 12 cleaning towels.  
Box of 24 x 8g intramammary syringes and 24 cleaning towels.  
Box of 60 x 8g intramammary syringes and 60 cleaning towels.

Not all pack sizes may be marketed.

**5.5 Special precautions for the disposal of unused veterinary medicinal products 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**

VIRBAC

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

**8. DATE OF FIRST AUTHORISATION**

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

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

**ANNEX III**  
**LABELLING AND PACKAGE LEAFLET**

## **A. LABELLING**

**PARTICULARS TO APPEAR ON THE OUTER PACKAGE****CARTON BOX OF 12; 24; 60 INTRAMAMMARY SYRINGES AND CLEANING TOWELS****1. NAME OF THE VETERINARY MEDICINAL PRODUCT**

Rilexine DC 375 mg intramammary suspension [FR, AT, BE, BG, CZ, DE, EE, HR, HU, IE, IT, LT, LV, NL, PL, PT, RO, SK, SI, UK(NI)]

Rilexine secado 375 mg intramammary suspension [ES]

Cefalexin Virbac 375 mg intramammary suspension [DK]

Cefalexin Virbac vet 375 mg intramammary suspension [FI]

**2. STATEMENT OF ACTIVE SUBSTANCES**

Each 8 g intramammary syringe contains:

Cefalexin 375 mg (equivalent to 500 mg of cefalexin benzathine)

**3. PACKAGE SIZE**

12 x 8g intramammary syringes and 12 cleaning towels

24 x 8g intramammary syringes and 24 cleaning towels

60 x 8g intramammary syringes and 60 cleaning towels

**4. TARGET SPECIES**

Cattle (dry cows).

**5. INDICATIONS****6. ROUTES OF ADMINISTRATION**

Intramammary use.

**7. WITHDRAWAL PERIODS**

Withdrawal period:

Meat and offal: 4 days

Milk:

- 12 hours after calving when dry period is more than 42 days
- 42.5 days after treatment when dry period is 42 days or less

**8. EXPIRY DATE**

Exp. {mm/yyyy}

Once opened, use immediately.

<b>9. SPECIAL STORAGE PRECAUTIONS</b>
---------------------------------------

Do not store above 25 °C.

<b>10. THE WORDS “READ THE PACKAGE LEAFLET BEFORE USE”</b>
--

Read the package leaflet before use.

<b>11. THE WORDS “FOR ANIMAL TREATMENT ONLY”</b>
--

For animal treatment only.

<b>12. THE WORDS “KEEP OUT OF THE SIGHT AND REACH OF CHILDREN”</b>
--

Keep out of the sight and reach of children.

<b>13. NAME OF THE MARKETING AUTHORISATION HOLDER</b>
---

VIRBAC

<b>14. MARKETING AUTHORISATION NUMBERS</b>
--

<b>15. BATCH NUMBER</b>
-------------------------

Lot {number}

<b>MINIMUM PARTICULARS TO APPEAR ON SMALL IMMEDIATE PACKAGING UNITS</b>
<b>INTRAMAMMARY SYRINGE</b>

<b>1. NAME OF THE VETERINARY MEDICINAL PRODUCT</b>
--

Rilexine DC [FR, AT, BE, BG, CZ, DE, EE, HR, HU, IE, IT, LT, LV, NL, PL, PT, RO, SK, SI, UK(NI)]  
Rilexine secado [ES]  
Cefalexin Virbac [DK]  
Cefalexin Virbac vet [FI]

<b>2. QUANTITATIVE PARTICULARS OF THE ACTIVE SUBSTANCES</b>
---

375 mg

<b>3. BATCH NUMBER</b>
------------------------

Lot {number}

<b>4. EXPIRY DATE</b>
-----------------------

Exp. {mm/yyyy}

## **B. PACKAGE LEAFLET**

## PACKAGE LEAFLET

### 1. Name of the veterinary medicinal product

Rilexine DC 375 mg intramammary suspension for dry cows [FR, AT, BE, BG, CZ, DE, EE, HR, HU, IE, IT, LT, LV, NL, PL, PT, RO, SK, SI, UK(NI)]

Rilexine secado 375 mg intramammary suspension for dry cows [ES]

Cefalexin Virbac 375 mg intramammary suspension for dry cows [DK]

Cefalexin Virbac vet 375 mg intramammary suspension for dry cows [FI]

### 2. Composition

Each 8 g intramammary syringe contains:

#### Active substance:

Cefalexin 375 mg (equivalent to 500 mg of cefalexin benzathine)

White to yellowish oily suspension.

### 3. Target species

Cattle (dry cows).

### 4. Indications for use

For the treatment of subclinical mastitis at dry-off and prevention of new intramammary infections occurring during the dry period, caused by *Staphylococcus aureus*, *Streptococcus dysgalactiae* and *Streptococcus uberis*.

### 5. Contraindications

Do not use in cases of hypersensitivity to cephalosporins, other  $\beta$ -lactam antibiotics or to any of the excipients.

### 6. Special warnings

#### Special warnings:

Cross resistance occurs with other  $\beta$ -lactams.

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

Use of the product should be based on identification and susceptibility testing of the target pathogen(s). If this is not possible, therapy should be based on epidemiological information and knowledge of susceptibility of the target bacteria at farm level, or at local/regional level.

Use of the veterinary medicinal product should be in accordance with official, national and regional antimicrobial policies.

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.

The rules of asepsis must be scrupulously followed during the administration of the product. The efficacy of the veterinary medicinal product has only been established against the pathogens mentioned in section “Indications for use”. Consequently, serious acute mastitis (potentially fatal) due to other pathogen species, mainly *Pseudomonas aeruginosa*, can occur after the drying off.

Appropriate veterinary and husbandry measures including good hygienic practices should be taken to reduce that risk. Cows should be housed in a hygienic paddock located apart from the milking parlour. Cows should be regularly checked several days after drying off.

The feeding of waste milk containing residues of cefalexin to calves should be avoided up to the end of the milk withdrawal period (except during the colostral phase), because it could select antimicrobial-resistant bacteria within the intestinal microbiota of the calf and increase the faecal shedding of these bacteria.

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

Penicillins and cephalosporins may cause hypersensitivity (allergy) following injection, inhalation, ingestion or skin contact. Hypersensitivity to penicillins may lead to cross-reactions to cephalosporins and vice versa. Allergic reaction to these substances may occasionally be serious.

People with known hypersensitivity to cefalexin, penicillins or cephalosporins, or who have been advised not to work with penicillin or cephalosporin preparations, should avoid contact with the veterinary medicinal product.

Handle this veterinary medicinal product with great care to avoid exposure. Wear gloves during administration of the veterinary medicinal product and wash hands after use.

In case of accidental contact with skin or eyes, wash immediately with clean water.

If you develop symptoms following exposure, such as a skin rash, seek medical advice immediately and show the package leaflet or the label to the physician. Swelling of the face, lips or eyes or difficulty with breathing are more serious symptoms and require urgent medical attention.

Those developing a reaction after contact with the veterinary medicinal product should avoid handling the product (and other cephalosporin and penicillin containing products) in future.

The cleaning towels supplied with the veterinary medicinal product contain isopropyl alcohol, which may cause skin or eye irritation in some people. The wearing of gloves is recommended during the administration of the veterinary medicinal product and when handling the cleaning towels.

#### Pregnancy:

The veterinary medicinal product is intended for use during pregnancy. The safety of the veterinary medicinal product has not been established during pregnancy in specific target animal safety studies. However, no adverse effects on the foetus were observed in the clinical trial. Moreover, as the quantities of cephalexin absorbed by the intramammary route are low, the use of this medication during pregnancy does not present any particular problem.

#### Lactation:

Do not use during lactation of lactating dairy cows.

#### Interaction with other medicinal products and other forms of interaction:

The safety of concomitant use of the veterinary medicinal product and other intramammary products has not been established, simultaneous use is discouraged.

Do not use simultaneously with bacteriostatic antibiotics.

### Overdose:

See section “adverse events”.

### Major incompatibilities:

Not applicable.

## **7. Adverse events**

Cattle (dry cows):

Rare (1 to 10 animals / 10,000 animals treated):
Allergic reaction <sup>1</sup> (Agitation, Trembling, Mammary gland oedema (swelling), Swollen eyelid, Swollen lip)

<sup>1</sup> Immediate, can lead to death in certain animals.

Reporting adverse events is important. It allows continuous safety monitoring of a 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 or the local representative of the marketing authorisation holder using the contact details at the end of this leaflet, or via your national reporting system: {national system details}.

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

For single intramammary use.

375 mg of cefalexin (equivalent to 500 mg of cefalexin benzathine) i.e. the content of one syringe should be infused one into each quarter via the teat canal immediately after the last milking of the lactation.

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

Milk out thoroughly before starting administration. Before administering the veterinary medicinal product, the teats should be thoroughly cleaned and disinfected using the provided cleaning towel, and care should be taken to avoid contamination of the syringe nozzle. Administer the full content of a syringe in each quarter. Massage after administration. After administration it is recommended to immerse the teat in an approved disinfectant bath. Do not milk after treatment.

## **10. Withdrawal periods**

Meat and offal: 4 days

Milk:

- 12 hours after calving when dry period is more than 42 days
- 42.5 days after treatment when dry period is 42 days or less

## **11. Special storage precautions**

Keep out of the sight and reach of children.

Do not store above 25 °C.

Do not use this veterinary medicinal product after expiry date which is stated on the label after Exp. The expiry date refers to the last day of that month.

Shelf life after first opening the immediate packaging: use immediately.

## **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.

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

Box of 12 x 8g intramammary syringes and 12 cleaning towels.

Box of 24 x 8g intramammary syringes and 24 cleaning towels.

Box of 60 x 8g intramammary syringes and 60 cleaning towels.

Not all pack sizes may be marketed.

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

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:

VIRBAC  
1<sup>ère</sup> avenue 2065m LID  
06516 Carros  
France

Manufacturer responsible for batch release:

VIRBAC  
1<sup>ère</sup> avenue 2065m LID  
06516 Carros  
France

Or

HAUPT Pharma Latina S.R.L.  
Strada Statale 156 Dei Monti Lepini Km 47,600  
04100 Latina  
ITALY

Local representatives and contact details to report suspected adverse reactions:

For any information about this veterinary medicinal product, please contact the local representative of the marketing authorisation holder.

--